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## ORIGINAL LECTURES.

### LUPUS ERYTHEMATOSUS, ACUTE VESICULAR ECZEMA OF THE HANDS, AND OTHER DISEASES OF THE SKIN.

*A Clinical Lecture*

*delivered at the Hospital of the University of Pennsylvania.*

BY LOUIS A. DUHRING, M.D.,  
PROFESSOR OF SKIN DISEASES.

GENTLEMEN: This patient is a well-nourished, rather stout woman, with brown hair and eyes, who has a remarkably extensive development of lupus erythematosus, occupying the nose and both cheeks, and extending as far back as the ears. The greater portion of each cheek is involved, and, as is usually the case in this disease, in a symmetrical manner. The well-known "butterfly" form, the body being represented by the nose and the outspread wings by the cheeks, is here not so striking as usual, because of the widespread extent of the disease. The diseased skin is uniformly infiltrated, and is everywhere surrounded with a sharply defined, distinct, very slightly raised, red border. The skin is of a deep red, somewhat violaceous color, with a faint brownish tinge; is harsh and rough with scales, and is also the seat of scanty, dirty-yellowish, adherent, sebaceous crusts, which are less abundant than usual. The skin is manifestly much inflamed, slightly puffed, and warm to the touch. The process is active, and is evidently encroaching on healthy skin, as shown especially by the bright-red, raised border. And yet, nowhere do we find signs of superficial, whitish, atrophy of the skin, usually so characteristic of the disease, but this will probably appear later. The patient states that the affection began two years ago, and, as we see, has made rapid progress. The patch on the cheeks consists of a continuous sheet of disease. Ordinarily the patches are multiple, with more or less sound skin between them. There is considerable burning, which is markedly worse during the period when the process is most active. In almost all cases the disease inclines to spread more or less rapidly for a few weeks, and then to become quiescent for a variable period, and in the patient before us we have that history. The color and the sharp outline, here, suggest the appearance of vascular nævus, but the diagnosis presents no difficulties. Lupus vulgaris is eliminated because of the acutely inflammatory state of the skin and of the uniform distribution of the pathological process, which shows no disposition to form foci.

Where the disease is active and spreading, and the skin sensitive and hot, local treatment is generally attended with difficulties, for the reason that applications of any kind or strength are apt to disagree with the skin. Remedies that are useful in the subacute or chronic stage are here not tolerated, and the list of available applications is small. It must be kept in mind that, in the

acute stage, the disease is readily aggravated by injudicious treatment. We must first endeavor to control and reduce the active hyperæmia, and a valuable remedy for this purpose is composed as follows:

R.—Potassium sulphide . . . 5 to 20 grains.  
Zinc sulphate . . . 5 to 20 "  
Water . . . 4 ounces.  
Alcohol . . . ½ ounce.—M.

Apply as a wash, and shake before using.

The strength may be augmented or reduced to suit the skin. It should be dabbed on lightly for fifteen or twenty minutes two or three times a day, the sediment being allowed to remain. In the course of a few weeks this will probably prepare the skin for more energetic remedies, such as sulphur ointment or a tarry tincture. The prognosis, in such an extensive and virulent case as the present, is not favorable—at least a cure cannot be expected until after a long period.

#### PAPULO-SQUAMOUS SYPHILODERM.

This woman, about twenty years of age, exhibits an eruption of large, broad, sharply-defined maculo-papules, of a cherry-red color, some of them covered with slight scales, situated around the neck from ear to ear and extending into the scalp in the form of ill-defined, scaly patches. The lesions are a manifestation of syphilis, being a secondary eruption, the infection (of which there is no history) having occurred probably four or six months ago. The papules are linearly arranged around the neck, so as to resemble a necklace. About the angles of the mouth are syphilitic fissures, and about each ear there is a large, painful, fissured papule. There is also some glandular engorgement, post-auricular and epitrochlear. The general health is beginning to fail. The protiodide of mercury, one-quarter of a grain in pill-form, three times a day, and five-per-cent. oleate of mercury ointment to the lesions, will be ordered.

#### ACUTE VESICULAR ECZEMA OF THE HANDS.

The man before us, aged fifty, a street-car conductor, is suffering with an acute attack of vesicular eczema of the forearms, back of the hands, fingers, and sides of the face and neck, everywhere symmetrical. It began a week ago, and is now fully developed, showing vesicles, some ruptured and oozing, others intact; yellowish crusts; blood-crusts and scratch-marks, seated on a slightly puffed, inflamed skin. One of the best forms of treatment for such a case is a salicylic acid plaster, as the following:

R.—Salicylic acid . . . 15 grains.  
Powdered starch . . . 2 drachms.  
Zinc oxide . . . 2 "  
Cosmoline . . . 4 " —M.

This should be freely applied three or four times daily, the parts being well covered with the paste, to protect

the skin and exclude the air. Should this not prove decidedly beneficial in a few days, black-wash, followed by oxide of zinc ointment, will be advised. Internally, a tonic, saline aperient mixture will probably prove of value. A drachm and a half of sulphate of magnesium and one grain of sulphate of iron in a gobletful of water, to be taken a half-hour before breakfast, daily, may be prescribed for the next week or two.

#### VESICULAR ECZEMA OF THE HANDS AND FINGERS.

This youth, seventeen years of age, has a similar form of extensive vesicular eczema upon his hands and fingers, and symmetrically developed. It is subacute, and he states that it is of eight years' standing. During this period he has never been free from it, although, as is almost always the case, the disease has been better and worse from time to time, and it incapacitates him for any manual labor or occupation. Here a more stimulating form of treatment is indicated, and a calomel ointment, twenty or thirty grains of calomel to the ounce of oxide of zinc ointment, will be ordered. In three or four days, should no improvement take place, an ointment of resorcin, thirty grains, and salicylic acid, ten grains to the ounce, will be substituted, to be followed later by a tarry wash of one drachm of the alcoholic solution of coal-tar to eight ounces of water.

#### DRY SEBORRHOEA OF THE SCALP.

The young man before us complains of excessive dandruff, and upon examination of the scalp we find typical dry seborrhoea—the common variety of this disease. In mild cases, such as are usually met with, the diagnosis is easy; but in severe cases the affection may resemble squamous eczema or psoriasis. The treatment is generally followed by satisfactory results. An ointment of precipitated sulphur, one or two drachms to the ounce, which is the simplest and at the same time one of the most efficacious remedies, will be prescribed. Resorcin, as an ointment or as a lotion, is also useful, and may be ordered in the strength of from ten to twenty grains to the ounce. Lotions are often more convenient to apply than pomades, and a formula like this may be employed:

R.—Resorcin . . . . .	15 grains.
Glycerin . . . . .	10 minims.
Alcohol . . . . .	15 "
Water . . . . .	1 ounce.—M.

#### PUSTULAR ECZEMA.

The baby before us is suffering with a chronic, extensive, highly developed pustular eczema, involving the whole face, the greater part of the scalp, and the fore-arms and hands. The face is covered with brownish and greenish crusts, together with flat, yellowish pustules and excoriations. Upon the scalp the crusts are greenish. The crusts are to be loosened by soaking with a boric acid solution, after which a salicylic acid ointment, ten grains to the ounce, may be applied three times a day, to be followed in a few days by a mild tarry ointment, one drachm of tar ointment to the ounce. Should this not agree with the skin after a few days' trial, a calomel ointment, fifteen or twenty grains to the ounce, will be ordered. Directions will be given to the mother, who is nursing the babe, as to the general care of the patient.

The digestive tract must be watched, and any disorder corrected, for in many cases of infantile eczema the disease will be found to vary with the state of the alimentary canal.

## ORIGINAL ARTICLES.

### CLINICAL OBSERVATIONS ON THE HEALING OF ASEPTIC BONE CAVITIES BY SENN'S METHOD OF IMPLANTATION OF ANTISEPTIC DECALCIFIED BONE.<sup>1</sup>

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In a paper entitled, "On the Healing of Aseptic Bone Cavities by Implantation of Decalcified Bone," published in the *American Journal of the Medical Sciences*, September, 1889, Dr. Senn first called the attention of the profession to this method of hastening the repair in defects of bone, the result of either disease or trauma. In this article Dr. Senn gives a complete review of all that had been previously done in this direction, the result of his own experimental research on animals, and the record of ten clinical observations on the treatment of suppurative and of tuberculous osteomyelitis. Since then he has had under treatment, in the Milwaukee Hospital, eleven similar cases. These he has kindly placed at my disposal. Dr. O'Keef, of Oconto, Wis., at a recent meeting of the Brainard Medical Society, reported one successful case; and Dr. Jones, of Red Wing, Minn., has furnished me with an interesting case. These, with one from my own practice, make in all fourteen cases. In literature, as far as I am aware, only two cases are recorded, one by Deaver, of successful secondary implantation, and one by Weir, which resulted in failure. Professor Esmarch, in a letter to Dr. Senn, states that he has used decalcified bone-chips in two cases. In the first some suppuration occurred, and a few of the chips came away; and in the second, a case of necrosis of the shaft of the tibia, he obtained definite healing by the fourteenth day under one dressing.

Before proceeding to give these cases in detail, it would be well to consider briefly the structure of decalcified bone, and the changes which it undergoes when placed in the peritoneal cavity and in bone; also the preparation of the bone for implantation, the operation, and the after-treatment.

*Structure of Decalcified Bone.*—Decalcified bone is soft, flexible, and elastic, and by boiling can be reduced to gelatin. It constitutes about one-third part of bone, the other two-thirds consisting principally of phosphate and carbonate of lime. Histologically, it is made up of variously arranged lamellæ, apposed and bound together by fibres of white con-

<sup>1</sup> Read before Wisconsin State Medical Society, June 5, 1890.

nective tissue (Sharpey's fibres). The lamellæ at the periphery and around the Haversian canals have a concentric arrangement, and are irregular between the different systems. Interposed between and hollowed from the opposite surfaces of the lamellæ are the Haversian spaces, in which, in the intact bone, are situated the osteoblasts, and from these spaces extend the canaliculi through which they intercommunicate. Thus, decalcified bone is, histologically, an admirable framework for delicate granulating tissue, and this with a minimum amount of material to be removed by absorption.

In order to ascertain the changes undergone by decalcified bone after implantation, I chiselled a rectangular opening, 8 by 4 millimetres, in the compact layer of the tibia of a young dog, and removed the medulla with a sharp spoon. After opening the medullary cavity the hæmorrhage was very free, but was effectually arrested by plugging the cavity with a solid piece of decalcified bone, over which the periosteum was sutured with catgut and the skin with silk.

Fourteen days after this the animal was killed. Examination showed a formation of new bone under the periosteum, where it had been separated from the bone. This was most marked above the opening, where it was 3 millimetres thick, and was entirely absent immediately around the margin. The periosteum was firmly adherent to the implanted bone. On longitudinal section, through the margin of the opening in the compact layer, the implanted bone was found softened, and of a delicate pink color. The medullary cavity was filled by a solid cylinder of new bone below the point of implantation; complete at the upper margin of the opening, and gradually diminishing in thickness in an upward direction and on the side remote from the opening. A transverse section through the middle of the implanted bone showed that about one-third of it remained in the form of a wedge, the base of the wedge corresponding to the opening in the compact layer, and its apex reaching the centre of the medullary cavity, one-third of which had been obliterated by new bone. Immediately surrounding this remnant, and separating it from the new bony formation in the medullary cavity, was a thin layer of granulation tissue, on the medullary side of which could be detected filiform processes of new bone. Microscopical examination showed infiltration of the decalcified bone by small round cells,—osteoblasts,—most numerous at the periphery and gradually diminishing in number toward the periosteal side. At the margin the structure is composed of granulation-tissue; toward the periphery of the implanted bone the cells are arranged in rows between the lamellæ, and in circles around the Haversian system.

The changes observed are, removal of the decalcified bone, wholly or in part, by the action of the osteoclasts, and regeneration of the bone by osteoblasts, with or without the formation of granulation-tissue. Similar changes were observed in a thin piece of decalcified bone sutured to the serous coat of the intestine, and examined fourteen days later.

*Preparation of Bone-chips.*—The bones to be preferred are those with a thick, compact layer, such as the tibia and femur of the ox. They should be fresh, and after removing the periosteum and the medullary tissue, they are to be cut longitudinally into strips about 3 millimetres in width, and placed in a 10- to 15-per-cent. solution of hydrochloric acid. The fluid should be used in large quantity, and changed every twenty-four hours until the process of decalcification is complete, which requires from one to four weeks. The acid is removed by running water, or, better, by a weak solution of caustic potash. The decalcified bone is next cut into small chips, which are placed for twenty-four hours in a 1-to-1000 solution of corrosive sublimate for forty-eight hours, and finally preserved in a saturated solution of iodoform in ether. Before using they are taken from this solution, placed in a piece of aseptic gauze, and the ether and excess of iodoform dissolved out by alcohol. They should then be immersed in a 1-to-2000 sublimate solution, where they should remain until required for implantation, when the surface moisture is removed by rubbing them in iodoform-gauze. If the alcohol be not thoroughly removed, the chips, by imbibition of fluids after implantation, may swell and produce undue tension on the sutures. For the repair of cranial defects, plates of a thickness corresponding to that of the cranium are used. These are prepared by sawing the compact layer of bone into large, thin plates, and decalcifying them as above. Multiple perforations should be drilled in them to permit drainage of the space underneath, and the size and outline of the plate should correspond exactly to the bony defect.

*Operation.*—As stated by Dr. Senn, "The most essential condition for success in the treatment of bone defects by the implantation of decalcified bone is a perfectly aseptic condition of the tissues to be brought in contact with the implanted bone." These conditions are attained as follows: The field of operation is shaved, and washed with soft-soap and warm water, and then with 1-to-1000 sublimate solution. If time allows, this is done on the day prior to that fixed for the operation, and the parts are meanwhile kept covered by a moist sublimate compress. After the patient is anæsthetized the limb is elevated, the elastic constrictor applied, the field of operation surrounded by towels wrung from a 5-per-cent. solution of carbolic acid, the compress, if



present, is removed, and the final disinfection is always made with alcohol. The seat of the disease is exposed by a free incision down to the bone, and the periosteum with the attached soft parts is reflected. If a sinus exists it serves as a guide; if absent a new bony formation under the periosteum will answer; and in the absence of either the point of greatest tenderness must constitute the guide. The next step consists in exposing the seat of the bone-lesion by chiselling away the outer compact layer, sufficient of which should be removed to allow inspection and direct treatment of the whole cavity. All granulations and diseased tissue are to be removed by a sharp spoon or chisel, during which frequent irrigation with a 1-to-2000 sublimate solution (in cases of tubercular disease, a sherry-colored solution of tincture of iodine in water) should be used, in order to diminish the risk of traumatic diffusion of pathogenic microbes.

All unhealthy and undermined skin or cicatricial tissue should be excised, even at the risk of leaving a defect in the soft tissue covering the bone; and sinuses in the soft tissues should be cleared of granulations by the sharp spoon and thoroughly disinfected and iodoformized. A final irrigation is then made, the cavity is dried and freely dusted with iodoform. Into the cavity thus made, the chips are firmly packed until the level of the periosteum is reached; a catgut drain is introduced at the most dependent point (viewed from the recumbent position) of the cavity, and the periosteum sutured with fine catgut. If hæmorrhage from the soft tissues is expected, the constrictor is at this stage removed; if hæmorrhage is not probable, it is allowed to remain until after the dressing has been applied. If necessary to secure accurate coaptation of the soft parts, buried sutures of catgut are introduced, and the skin is sutured with silk.

*Dressing.*—The wound is dusted with iodoform, and covered with oiled silk and several layers of iodoform-gauze, which should encircle the limb. The margin of the gauze is guarded by plenty of salicylated cotton, and over this is placed a cushion of sublimated moss and common cotton; the whole being retained in position by a firmly and evenly applied bandage. To secure rest the limb is fixed on a splint and kept in the elevated position for from six to twelve hours.

When there exists a defect in the soft tissues, the chips are firmly retained in the cavity by the pressure of an iodoform-gauze tampon, and if the parts remain aseptic healthy granulations will encroach on the defect and fill it up.

*After-treatment.*—During the first twenty-four hours the dressing is frequently inspected, and if the discharge has soaked through, those points are covered with salicylated cotton. If, at the end of

that time, the dressing is still moist, it is changed; but if dry, it is allowed to remain and infection guarded against by iodoformization and the application of several layers of salicylated cotton. The first dressing, in the absence of any complications, is made between the tenth and fourteenth day, when the sutures are removed. Union will generally be found complete, except a few granulations at the point of drainage. Future dressings are made at intervals of two to three weeks. The patient is confined in the recumbent posture until the site of the bony defect feels firm and is free from pain. This varies from one to four months, in accordance with the extent of the defect, age of the patient, and the regenerative power of the bone.

*CASE I. Circumscribed central osteomyelitis of the tibia.*—L. S., aged eighteen years, male, was admitted into the Milwaukee Hospital, March 13, 1889. For the past three years the patient had suffered from pain in the region of the left ankle; the diagnosis of sprain and rheumatism had been made by different physicians, and treatment adopted accordingly, without any benefit. He had been able to walk until within the last few weeks. The symptoms present on admission were swelling and oedema over the lower epiphyseal line of the tibia, with local increase of temperature, and point of greatest tenderness immediately above this line.

*Operation:* Making a linear incision over the point of greatest tenderness and reflecting the thickened periosteum with the attached soft tissues, the bone was here explored with a drill, and pus found. This exploratory opening was enlarged by a chisel and an abscess-cavity, containing half a drachm of pus, surrounded by osteoporotic bone, was exposed. The removal of all the pus-infiltrated, cancellated tissue necessitated the exposure of the upper surface of the articular cartilage, and a central cavity remained, twice the size of a hazelnut. This was firmly packed with bone-chips.

First dressing at the end of a week; incision healed, except at drain-opening. A week later, on changing dressing, superficial suppuration was present, and, despite daily change of dressing, the infection extended, so that about six days afterward some of the bone chips came away. Repair was complete by the tenth week from operation, the site of which was indicated by a slight depression in the bone.

*CASE II. Diffuse osteomyelitis of os calcis.*—J. G., female, aged forty years; admitted into the Milwaukee Hospital, May 10, 1889, with the following history:

About one year ago she stepped hurriedly from a street-car, and alighted upon the rail with her left heel; to this she paid no attention, considering the resulting pain only a simple bruise. The pain, however, continued to increase, and at last, calling in medical aid, treatment for sprain was adopted. This was continued for months, but the pain remained on throwing her weight on the heel. On admission, inspection revealed nothing; there was



no local increase of temperature; the point of greatest tenderness was located in the middle line on the posterior aspect of the os calcis, above the insertion of the tendo-Achillis, and, on comparing the heels, a nodular prominence could also be detected at this point.

*Operation:* The nodule was exposed by a linear incision which divided the tendo-Achillis longitudinally in the middle line; the thickened periosteum was reflected, with the soft tissue, and the compact layer of bone removed by a chisel, thus disclosing an extensive osteomyelitic focus. After removing all infected tissue, there remained a cavity one inch deep, one-fourth of an inch wide, and three-fourths of an inch long, which was packed with bone-chips. The periosteum and tendo-Achillis were sutured with fine silk and the superficial incision with medium silk. The relief from pain was prompt. The patient left the hospital at the end of three weeks, when firm pressure on the previously tender point did not give the slightest pain, and there has been no return of the disease.

*CASE III. Tuberculosis of the knee-joint; resection.*—M. L., a strong, apparently healthy female, twenty-six years of age, with no family history of tuberculosis, has, for the past eight years, suffered from knee-joint trouble. One year ago a layman undertook to effect a cure. This treatment was followed by an acute synovitis, which, after four months' rest in bed, subsided so that the patient was able to get around again. A second attack occurred during the past winter, leaving the knee permanently enlarged. Since March she has been walking on crutches. On admission to the hospital, November 5, 1889, there was found fibrous ankylosis of the knee and uniform enlargement of the joint, which to the examining finger felt firm. No glandular enlargement in the groin.

*Operation:* Complete resection of the knee-joint, patella included. On section of the tibia, the bone was found highly osteoporotic, and in the inner tuberosity a triangular sequestrum surrounded by granulation-tissue and encased by sclerosed bone. Corresponding to this there was present a caseous deposit in the inner condyle of the femur. Both these were eliminated, and there remained in the condyle a cavity the size of a pigeon's egg, and in the tibia one of half that size. After complete extirpation of the capsule, thorough iodoformization of the wound and ignipuncture of the tibia, both cavities were firmly packed with decalcified bone-chips before bringing the resected ends into apposition. A catgut drain was introduced at either angle of the incision, which was closed by deep sutures of catgut and superficial of silk. The quadriceps and patellar tendons were united by a strong catgut suture. A large antiseptic dressing was applied, and retained by a plaster-of-Paris bandage, in which was incorporated a posterior iron splint extending from the middle of the thigh to the toes. The limb was kept in an elevated position for two weeks. The highest temperature, 101.5° F., was reached the evening of the second day; the following morning it was reduced to 99° F.

No rise in temperature after this date. At the

first dressing, on the sixteenth day, the incision had completely healed, except at the points of drainage; sutures removed and plaster-of-Paris dressing re-applied. Twelve days later, the dressing was removed and the incision found completely healed; examination at the end of the sixth week showed well-advanced consolidation, with only three-quarters of an inch shortening. Fixation dressings were dispensed with twelve weeks after operation, and the patient ordered to walk on crutches. This she refused to do until two weeks later, when, to her surprise, she could bear her weight on the limb without pain or inconvenience.

*CASE IV. Penetrating wound of the elbow-joint; secondary suppurative synovitis and osteomyelitis of the humerus.*—C. P., male, seventeen years of age; admitted into the Milwaukee Hospital, July 20, 1889, suffering from suppurative synovitis of the right elbow and osteomyelitis of the lower end of the humerus, following a penetrating wound of the elbow-joint four weeks previously. The wound in the soft parts was situated immediately above the external condyle. On the day of admission thorough drainage of the joint was established, and all the infected medullary tissue removed by the chisel and sharp spoon. Everything progressed favorably until the middle of September, when the central osteomyelitis began to extend upward. Toward the end of November two abscesses developed in the upper portion of the arm, one opposite the middle of the humerus anteriorly, the other opposite the surgical neck on the outer aspect. These were incised and drained. In January, the elbow and the lower fourth of the humerus having recovered, the patient assumed the duties of the hospital choreman. The drainage-openings continued to discharge, and for the cure of this chronic central osteomyelitis the following operation was undertaken, November 26th: The shaft of the humerus was exposed at the superficial openings, and two corresponding cloacæ communicating with each other through the medullary cavity were found in the bone. Between these two points the medulla was exposed by chiselling away the outer lamella of sclerosed bone. The disease was limited above by the epiphyseal line to which the upper opening corresponded, and extended downward in the middle of the shaft to the point where the first operation terminated—at the upper boundary of the lower fourth of the humerus. To remove this, more of the outer lamella was chiselled away, so that when all the diseased tissue had been removed there remained a cavity half an inch wide, and spiral in direction, extending from the upper epiphyseal line on the outer aspect, downward and inward, and terminating anteriorly at the upper border of the lower fourth of the humerus. The cavity was filled with decalcified bone-chips, a catgut drain was introduced at the upper angle of the incision, and the wound sutured. The dressing was renewed on the second day, as it had become saturated with blood; weekly dressing thereafter. The arm was kept in the elevated position for four weeks, and everything being healed, the patient was allowed to leave his bed. At the end of six weeks he resumed his duties as choreman, and left the hospital in the latter part

of March. Examination at this time showed general atrophy of the whole upper extremity from non-use; cicatrix perfectly free, and painless throughout; the gutter represented by a very shallow groove, about one-fourth of an inch in width.

In this case implantation of decalcified bone was not practised at first, because the proximity to the suppurative process in the elbow-joint rendered it impossible to keep the parts aseptic. Even in the presence of this condition the osteomyelitis did not begin to extend upward for six weeks, and it is reasonable to infer that the extension was due to incomplete removal, or to latent microbes becoming again active from some unknown exciting cause, and not to reinfection, because repair in the lower fourth of the humerus was complete at the end of the fifth month. It also affords a comparison in regard to the time necessary for repair, with or without the implantation of decalcified bone. In the former, five months were necessary, and in the latter, six weeks sufficed, although there remained throughout the whole extent of the gutter only three-fourths of the compact layer of the humerus.

**CASE V. Chronic central osteomyelitis, secondary to compound fracture.**—C. L., male, thirty-eight years of age, sustained, five months ago, a compound fracture of the left leg, in the lower third. Sloughing of the soft tissues over the anterior surface of the tibia occurred about the end of the second week. Union advanced slowly, and at the point of sloughing there remained a small opening, surrounded by granulations and communicating with the medullary cavity of the bone.

**Operation,** December 31, 1889: The point of fracture was exposed by a linear incision, the periosteum reflected, and the medullary cavity opened by enlarging the opening in the bone by a chisel. Sufficient of the outer lamella was chiselled away to permit complete removal of all the diseased medulla by the sharp spoon. When completed there remained a cavity two inches in length, and half an inch in width, centrally located in the lower fragment. This was packed full of decalcified bone-chips, a drain inserted at the lower angle, and the wound closed in the usual manner.

At the end of the first week the dressing was changed, and sutures removed, when union was found complete, except at the lower angle, where some of the sutures had cut through. Eleven days later, on changing the dressing, some of the bone-chips came away while irrigating; those that remained were firmly embedded in granulation-tissue. This defect healed by granulation, and four weeks later the patient left the hospital cured, the upper part of the cicatrix being free. Where healing by granulation had taken place the cicatrix was adherent with but slight depression in the outline.

**CASE VI. Tuberculosis of the ankle-joint; resection.**—W. C., male, nineteen years of age; was admitted into the Milwaukee Hospital, January 21, 1890, with the following history: Father died of asthma,

and two sisters of phthisis. At the age of seven patient had measles, followed for three years by sore eyes. As the eyes improved trouble developed in the left ankle, which compelled him to use crutches for three years more. He continued well until about four months ago, when the same ankle began to swell. There was no pain except when stepping hard on the heel. Patient very anæmic; ankle ankylosed and enlarged; no fluctuation; swelling most marked behind the external malleolus; thickening of the lower end of the tibia.

**Operation:** Resection, with a chisel, of the external malleolus and articular surface of the tibia, and complete removal of the astragalus through a linear incision behind the external malleolus. The primary depots were found in the tibia, from which the disease had extended to the articulation and the astragalus. After removing these depots two cavities remained, one the size of a marble, and the other half that size. These were filled with decalcified bone-chips, and the bones brought into apposition; the incision closed; and the foot placed on a rectangular splint, and retained by plaster-of-Paris. On the third day a change of dressing was necessitated because of saturation with bloody serum; seventeen days subsequently the sutures were removed. Union was complete except at the points of drainage. With the exception of the formation of a small connective-tissue abscess on the inner side of the tendo-Achillis, recovery was uninterrupted. Patient walked on crutches at the end of the second month, and left the hospital two weeks later, greatly improved in general health, and with advancing bony ankylosis of the ankle.

**CASE VII. Tubercular osteomyelitis of the tibia.**—A. A., male, twenty-two years old, with no hereditary history of tuberculosis. An abscess developed over the lower half of the tibia twelve years ago. This opened spontaneously, and several small sequestra came away in the discharge, followed in several weeks by cure. Ten years' later pain began in the middle of the tibia. This gradually increased, and finally poultices were applied. Two weeks ago, under this treatment, a small abscess opened, the site of which is now indicated by a small sinus on the inner side of the crest of the tibia, and a little below the middle of the bone. Below this point there is a general thickening of the bone with rounding of the crest.

**Operation,** January 30, 1890: On reflecting the soft tissues a small pin-hole opening leading to the medullary cavity was found in the middle of the anterior surface of the tibia, at the same level, but not corresponding with the opening in the skin. With this as a guide the medullary cavity was opened by a chisel, and found filled with fungous granulations, in which was embedded one small sequestrum. The disease extended upward, and when completely removed, there remained a cavity four inches in length and one in width, centrally located. This was packed with bone-chips, and treated in the usual manner. On the tenth day, when the dressing was renewed, the incision was completely healed, except at the point where the catgut drain had been introduced, and fourteen days

later, on the second change of dressing, this also had closed. The new tissue in the cavity at this point felt firm, and was painless on pressure, and the cicatrix was almost on a level with the old bone. On the thirty-second day the patient was allowed to walk on crutches.

**CASE VIII. Osteomyelitis following compound fracture.**—J. L., male, aged twenty-four years, sustained a compound fracture of leg near the middle, ten months ago. Infection occurred; one small piece of bone was discharged; union was slow and accompanied with considerable thickening at the seat of fracture; a sinus surrounded by large oedematous granulations leads to the point of fracture.

**Operation,** February 5, 1890: After reflecting the soft tissues, the medullary cavity was opened by chiselling away anteriorly the exuberant callus around the sinus. Three small sequestra were found, and after removing all the osteomyelitic tissue a central cavity four inches in length and one in width remained. Bone-chips implanted in the usual manner. On the eighth day the sutures were removed, some of which had cut through at the site of the excised sinus-opening. This healed by granulation and left a slight depression, otherwise the contents of the cavity, in five weeks, were firm and on a level with the surrounding bone. At this time he resumed the use of his crutches, and one week later left the hospital.

**CASE IX. Osteomyelitis of the tibia and of the seventh rib.**—E. V., male, eleven years of age, had in the fall of 1888 an acute attack of osteomyelitis in the lower third of the right tibia. This was treated by hot and cold applications without avail; an abscess developed six months later and was opened. The seventh rib was simultaneously involved and treated similarly. From each, several small sequestra came away in the discharge, but the sinuses remained. Since then the patient's general health has greatly improved.

**Present condition:** Thickening of the lower half of the tibia and undermining of the cutaneous tissue on the inner and anterior surface of the bone in the lower third, over a circular area one and a half inches in diameter, with a central sinus communicating with the medullary cavity.

**Operation,** March 3, 1890: All of the undermined tissue was excised and the periosteum with the soft parts reflected. The outer compact layer, which was thickened and sclerosed, was chiselled away in an upward direction for a distance of four and a half inches from the epiphyseal line. This gutter, one inch in width, was packed with decalcified bone-chips. After suturing the soft parts a triangular defect remained where the soft tissues were undermined. Here the chips were firmly forced into the cavity by a small compress of iodoform-gauze and the ordinary antiseptic dressing was applied. Two inches of the rib were excised at the same time. Eleven days later the dressing was changed; some of the sutures had cut through, and the chips, left uncovered by soft tissues, were found firmly embedded in a blood-coagulum. The sutures were all removed and a similar dressing re-applied. The chest incision had completely healed.

At the second dressing, one week later, some of the superficial chips came away, when those underneath could be seen firmly fixed in the granulation-tissue and partly covered by the same. At the end of the tenth week repair was complete, and there remained a slight depression where healing took place by granulation.

**CASE X. Tuberculosis of the knee; arthrectomy.**—E. K., four and a half years old; child of healthy parents, and with no family history of tuberculosis, was admitted to the Milwaukee Hospital, March 10, 1890, for knee-joint trouble secondary to an injury six months previously. At present the joint is uniformly enlarged, painless, and doughy on palpation. A typical arthrectomy was made on the same day, and the primary depot of infection found in the intercondyloid notch, where limited sequestration had occurred. When this depot was removed there remained a cavity the size of a hazelnut, which was packed with bone-chips. Recovery was retarded by an acute attack of catarrhal icterus, which developed the second day after the operation and lasted about a week. Some suppuration occurred in the superficial incisions, which had completely healed by the end of the twelfth week. There was also at this time some movement in the joint.

**CASE XI. Tuberculosis of the knee; resection.**—J. H., male, seventeen years old, was admitted into the Milwaukee Hospital, April 5, 1890, with the following history: At the age of six he fell from a tree and injured his left knee; some stiffness of the joint remained, but not such as to inconvenience him. About one year ago he sustained a second injury to the same knee, which was followed by a painless enlargement of the articulation. Later the joint became painful on walking, and for the past month the pain has been constant. No hereditary history of tuberculosis.

**Present condition:** Patient very anæmic; slight rise of temperature at night; pulse small and weak; knee ankylosed and enlarged, with a point of fluctuation on the inner side of the patellar tendon, which is also the point of greatest tenderness.

**Operation:** Linear incision over the point of fluctuation was followed by the escape of tubercular pus. Digital exploration of the cavity showed that it communicated with the joint, which was opened by the usual transverse incision for resection. An atypical chisel-resection of the ends of the bones was made, during which three tubercular depots were found in the head of the tibia and one in the condyle of the femur. Of those in the head of the tibia, two were situated in the inner half and one in the outer. In the former, tubercular necrosis had occurred, and in the latter the triangular sequestrum was surrounded by sclerosed bone. When these had been removed, two cavities remained, each the size of a walnut, that on the inner side being divided into two parts by a septum of sclerosed bone, and extending downward for about one and a half inches into the shaft to opposite the lower angle of the vertical incision. That in the condyle was the size of a hazelnut. All these were packed with bone-chips before the bones were brought into apposition, provision being made for drainage by strands of



catgut introduced at the angles of the transverse incision and at the lowest point of the vertical. Incisions closed by deep sutures of catgut and superficial of silk. On the following day, the dressing, having become saturated by sero-sanguineous discharge, was changed. The second dressing was made twenty-four days thereafter, when the incisions were found completely healed; the drain-opening at the lower angle of the vertical incision was closed by an aseptic blood-clot; the site of the cavity in the head of the tibia was firm, level with the surrounding bone, and painless on pressure, and consolidation of the bones had commenced. The sutures were removed and a light fixation-dressing of plaster-of-Paris applied, which, at the date of this report, has not been renewed.

CASE XII. *Osteomyelitis secondary to compound fracture of the femur.*—J. M. H., aged twenty-nine years, came under my care in May, 1889, for compound fracture of the femur, with extensive comminution of the bone immediately above the condyles. The periosteum was intact posteriorly. The wound in the soft tissues was on the inner side of the thigh about three inches above the epicondyle. Infection followed; a small shred of the underclothing and several small pieces of the bone came away with the discharges. In three months union had progressed so far that the patient could walk with the aid of crutches, and by the end of the sixth month a cane sufficed, yet the sinus at the site of the original wound in the soft parts did not close. On March 10, 1890, he was re-admitted into the Milwaukee Hospital for operation. The point of fracture was exposed by a linear incision on the anterior and inner aspect of the thigh. A small opening was found in the callus, and enlarging this by a chisel, a centrally located sequestrum, surrounded by granulations, was revealed. The sequestrum was extracted and the granulations removed by a sharp spoon, as were also those from the sinus. The cavity was the size of a walnut. This was packed with bone-chips; a small rubber drain was introduced through the sinus at the site of the original wound in the soft parts, and the incision closed by deep sutures of catgut and superficial of silk. A rise of temperature occurred on the fifth day, and on removing the dressing, superficial suppuration was found in the incision. Daily dressings were made, and on the ninth day some of the chips came away. Notwithstanding this the contents of the cavity at the end of the fourth week felt firm, and the incision had healed. The patient was now allowed to walk around, and two weeks later the sinus closed.

CASE XIII. *Compound comminuted fracture of the skull* (Dr. Jones's case).—A boy twelve years old. While coasting down a steep incline which crossed a railroad he came in collision with an express train, and sustained a compound comminuted fracture of the skull at the junction of the right parietal and occipital bones. Under the strictest antiseptic precautions the point of injury was exposed by a semilunar incision extending down to the bone, and the periosteum with the soft tissues was reflected. All the fragments of bone were removed,

leaving an irregular defect two and a half by three and a half inches. This was accurately closed by three pieces of partially decalcified bone; periosteum sutured with catgut and skin with silk. A small drain was introduced at the lower angle of the incision down to the implanted disks, and a large antiseptic dressing applied. On the second day the drain was removed and on the eighth the sutures, when union was found complete. Eleven weeks after the receipt of the injury the defect was so firm as to justify the boy's return to school. Four months have now elapsed since the accident, and the defect is still as hard and unyielding to pressure as the surrounding bone, with which it is on a level, and is, Dr. Jones believes, ossified. The use of partially decalcified bone was purely accidental, the bone having been taken from the decalcifying fluid at too early a date. The doctor suggests that the partial decalcification may account for so rapid ossification. This is not tenable, for the viability of all the osteoblasts must of necessity have been destroyed and the undecalcified portion of the bone was so much more foreign and inert material to be removed by absorption.

A parallel case to the above, where viable bone-grafts were used, is reported by R. Jaksch:<sup>1</sup>

"A soldier, aged twenty-two years, had a depressed<sup>1</sup> comminuted fracture of the right parietal bone. The opening was cleared, leaving a hiatus of three centimetres in diameter. It was dressed antiseptically. In eight days the skull of a living goose was laid bare, the head was cut off at a single blow, the skull disinfected with ether and sublimate solution, and the whole placed in a 2-per-cent. solution of carbolic acid at a temperature of 38-40° Cent. The calvarium was removed while in the solution and divided into eight pieces, which were laid upon the granulating dura. An iodoform dressing was applied and retained for ten days, when it was removed, and the bone-plates looked pink. Eight days subsequently they showed granulations on their upper surface. A week later the whole surface was granulating, and cure was complete in less than two months."

Contrasting these two cases, the first point to attract attention is the simplicity of Senn's method as compared with the course pursued in the latter case—a very complicated and time-consuming process, with multiple opportunities for accidental infection. Decalcified bone is always ready, or should be so, just as catgut is. There is no gain in time where viable grafts are employed. In the case of Jaksch's patient repair was complete in less than two months and in that of Jones's, in eleven weeks. In the former the time necessary for repair seems shorter, but in reality was not, for the defect there was only 3 centimetres (1½ inches) in diameter, and in the latter it measured 2½ by 3½ inches, nearly three times as large, and this had closed in about four weeks longer, so that the question of time is in favor of decalcified bone. The result was equally good in both cases.

CASE XIV. *Osteomyelitis of the head of the tibia.* (Dr. O'Keef's case).—A young, healthy male, who,

<sup>1</sup> Wiener med. Wochenschrift, September 21, 1889.

while suffering from gonorrhœa, fell and contused the head of the fibula. This was followed by pain in the region of the knee, causing inability to walk. Point of greatest tenderness over the head of the fibula. Tentative drill-exploration of the head of the fibula revealed the presence of pus in the cancellated structure. Part of the compact layer was removed by a chisel, and the medulla by a sharp spoon, leaving only a shell of compact bone. This cavity was packed with bone-chips. Definite healing occurred in thirteen days, under two dressings, and three weeks later the head of the fibula was firm, painless on pressure, without depression, and the cicatrix non-adherent. The patient at this time could walk as well as ever.

The case recorded by Deaver<sup>1</sup> was one of secondary implantation in chronic central osteomyelitis of the lower end of the femur, with sequestration. His colleague, Dr. White, removed the sequestrum and all the infected tissue, leaving a cavity five inches in length and one in width. This was treated in the ordinary manner for seven weeks, but the progress of the regeneration was so slow that Dr. Deaver resolved to try the implantation of decalcified bone-chips. He modified Senn's method somewhat, by placing the bone-chips in successive layers with intervening layers of sterile iodoform. His patient suffered from iodoform intoxication, but this he considers no objection to the method, believing that the beneficial effects of absolutely sterile iodoform, especially in tubercular and syphilitic subjects, more than counterbalance any danger from this source.

This may be questioned by some, but as repair in the soft tissues progresses most rapidly where hæmostasis is absolute, is it not possible that the hæmostatic properties of iodoform may hasten the desired result in cases of implantation? Repair was complete in one month, one-half the time already consumed in treatment without implantation.

Weir's case<sup>2</sup> was one of necrosis of the lower end of the tibia. At the end of two weeks on making the first change of dressing he found that "although everything had apparently gone well, every one of the pieces of decalcified bone had dissolved and come away in the discharge from the wound, and that notwithstanding this there had been some organization of the blood-clot." In none of the above recorded cases did this happen. Even where some of the chips did come away, they were only softened and not dissolved, and if dissolved, how could they be distinguished in the discharge? It is more likely that there was faulty preparation of the chips, probably maceration, or imperfect packing of the cavity. Dr. Weir doubts the success of the operation for two reasons: First, the difficulty of securing a perfectly aseptic condition of the cavity, and, second, because

he fails to see how decalcified bone, catgut, or any similar material, can be converted into new bone. He believes that they may serve as a framework—and this is all that Senn claims for decalcified bone; a blood-clot can do no more, and the organization (so called) of this, Weir evidently believes in. He will try by preference the transplantation of viable bone-grafts from the bones of young animals taken from the neighborhood of the epiphyseal line; but to this procedure his first objection—the difficulty of securing an aseptic cavity—is much more applicable than to the use of decalcified bone-chips. In the viable grafts we have, at best, only an aseptic substance, while in the decalcified bone-chips we have a strongly antiseptic one. The latter is surely the more preferable to introduce into a cavity the sterility of which is doubtful; and, further, viable bone-grafts will retain their vitality and grow in an aseptic medium only.

A careful study of the foregoing cases conclusively demonstrates the advantage to be derived from the implantation of decalcified bone in hastening repair in bone cavities. It has been seen that decalcified bone is a porous substance; an aseptic blood-coagulum, as shown by Schleich, is nothing else; and neither is the sponge-graft, as introduced by Hamilton. Hamilton, in his experiments on sponge-grafting, found that the layer of organizing tissue varies from one-eighth to one-tenth of an inch in thickness, and that, when it exceeds this, the granulations become cedematous and flabby. When an artificial framework, such as a blood-coagulum, sponge, or decalcified bone, is introduced, this does not occur, because the advancing granulations find a temporary support until the embryonic tissue becomes sufficiently organized. One strong objection to the method of Schede is the introduction into a cavity, which is at all times difficult to render aseptic, of a substance which is the best culture for pathogenic microorganisms. In decalcified bone we have a strongly antiseptic substance which will tend to destroy any pathogenic microbes that may remain; it is, as Senn terms it, "an antiseptic tampon." Further, the hæmostasis is rendered as complete as possible, only enough blood remaining in the cavity to fill the small spaces between the chips, and thus is met Bergmann's great objection to Schede's method.

The use of viable bone-grafts in pathological processes of bone is unnecessary and objectionable. They are unnecessary because there is no lack of osteogenetic material; the irritative action of the trauma is a great stimulus to the regenerative process, and it has been found, both experimentally and clinically, that if a framework be supplied the defect will become ossified just as soon, if not sooner, than where viable bone-grafts are used. They are also objectionable because sufficient aseptic bone-

<sup>1</sup> THE MEDICAL NEWS, Dec. 28, 1889.

<sup>2</sup> Ibid., Feb. 1, 1890.

grafts can never be obtained from the site of operation to fill the defect remaining after the removal of all the diseased bony tissue, and there is always the risk of reintroducing a septic graft. Any attempt made to render the grafts aseptic would necessarily destroy the osteogenetic power of the osteoblasts, and would entail the removal by absorption of the inorganic portion of bone, which amounts to two-thirds of the whole. Consequently, there would remain in every case a depression at the site of operation. This objection can be met by the use of viable grafts obtained from other sources, such as the bones of young animals, in the neighborhood of the epiphyseal line, as advocated by Poncet. This is a very complicated process, and consequently opens up many avenues for infection, with a remote possibility of the transmission of some other disease, such as tuberculosis, which has been transmitted by skin-grafts taken from limbs amputated for joint-disease; and if true of skin, why not of bone? Further, in all inflammation of bone accompanied by the formation of new bone, the first change is absorption of the pre-existing bone prior to the osteogenetic process being established. Take, for example, a plastic osteomyelitis: there is first osteoporosis, then osteosclerosis. In other words, bone, before it can be regenerated, returns to its embryonic condition. The same may be safely said of bone-grafts—they must return to their embryonic state before their osteogenetic power can assert itself. Such being the case, in the use of decalcified bone two-thirds of the material implanted—the inorganic part of bone—is removed artificially, and nature is aided to this extent. The osteoblasts are wanting, but, so far, those in the surrounding bone, under the irritative action of the trauma, have sufficed to repair the defect completely, when the framework remained; in short, the absence of the osteoblasts is more than counterbalanced by the diminished absorption rendered necessary.

#### MEDICAL SCIENCE IN CHINA.<sup>1</sup>

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THE aim of this paper is to describe some of the Chinese ideas of the nature of disease and the theory of treatment, then to sketch briefly the changes wrought in the past fifty years by the introduction of Western medical and surgical science.

The Chinese Empire has been fitly compared to Lot's wife: ever looking backward; wedded to the past. Confucius taught the nation that its work was not to create but to conserve and transmit. The usages of centuries have crystallized into unvarying forms. Life and thought move on through ancestral grooves, and that which is inquisitive,

inventive, progressive, is viewed with suspicion, if not at once rebuked as seditious. In its exact, comprehensive sense, science has no existence here. Theories, speculations, traditions, and superstitions abound, and are seen in astrology, geomancy, and medicine; but that cautious, candid, thorough investigation of facts, which we call scientific study, does not find an ally in the Chinese mind. The people are, moreover, fettered by a language pronounced by Professor Williams to be "the most meagre and tedious of all tongues." Though the most ancient, it is probably the most intractable of all spoken languages, making the Chinese scholar indifferent to other tongues, because it is impossible for him to study them through the medium of his own. All the terminology of chemistry, medicine, and natural history remains in Greek and Latin, but how to adapt technical Western science to the genius of this language is not easy to decide. Professor Williams also points out the indistinctness by which time is expressed; the confusion of common and proper names; the absence of punctuation, paragraphs, sentences, capital letters, and other helpful signs of speech which native conceit forbids and ridicules. Prejudice and ignorance, however, are greater obstacles than linguistic difficulties to the spread of modern science. This will be seen as we turn to the subject of medicine.

The literature, such as it is, is very copious. During my residence in Canton Hospital, I have had access not only to libraries but to other sources of information upon native medicine. One is amazed at the patience and industry of Chinese scholars in collecting observations in various departments of research. One work in materia medica and therapeutics appears in 40 volumes, and 756 authors are quoted on the same theme. Another work on the medical and agricultural uses of plants is printed in 60 volumes with 1715 engravings.

Dissection of the body being forbidden; the most absurd notions concerning anatomy and physiology have prevailed. Food is supposed to pass from the spleen into the stomach. The larynx leads into the heart; the soul is in the liver; and the pit of the stomach is the seat of breath and the source of joy—perhaps true in some cases. The skull is one bone, so are the arm and the pelvis. The right kidney is the gate of life. Each organ is related to one of the five elements: earth, air, metals, fire, or water. Fire rules the heart; metals rule the lungs; water rules the kidney; and so on. There is not a square inch of the body that is nameless. Applications to each region are made according to the guiding dual theory, of action and reaction—*yin* and *yang*. Heat and moisture are the vital principles. The blood and spirits are their vehicles. There are twelve channels of distribution.

<sup>1</sup> Read at a meeting of the Academy of Anthropology, New York, April, 1890.



The study of the pulse is the most important part of the physical diagnosis of disease. In the Peking Medical Museum is a copper model of a man pierced with many holes, and marked with the names of the pulse. There are three wrist-points and twenty-four kinds of pulse at each point of each wrist, so that the native doctor has 144 pulses to study, by which the condition of the body and even the sex of an unborn child are said to be determined. Of these twenty-four varieties, there are the slow and rapid pulse, the rough, the soft, the strong, the weak, the vibrating, the hidden and the impeded. If we find the latter at the first point of the left wrist, we may expect sudden death. If at the second point of the right wrist, water in the stomach is indicated. Seven cautions are given to the practitioner regarding his own quiet breathing and presence of mind, and manipulations. George Barrow, the traveller, was taken ill with cholera morbus, and a celestial Esculapius was called. Solemn as an undertaker, he fixed his eyes on the ceiling. Beginning at the wrist, he proceeded to the elbow, pressing hard with one finger and lightly with the other, as one plays a violin. After ten minutes' fingering, he pronounced the trouble to be gastric and caused by injudicious diet—a pretty good guess.

In taking the temperature of the body, I noticed that a native physician (whom I recently accompanied through the wards of his elegant hospital at Hong Kong) laid the back of his hand, as we do, on the cheek or carotid region. He also showed me the method of preparing the decoctions used internally and externally. Every fire-pot where the liquids simmer is marked, as are the scores of wooden boxes into which the dregs of the mixtures are put for inspection, whether from the animal, vegetable, or mineral kingdom. In one standard work there are 78 substances from the first and 314 from the vegetable kingdom. Mercury and arsenic are used in specific diseases. Ginseng is greatly prized. It is held as a governmental monopoly and gathered by detachments of soldiers. Opium, camphor, rhubarb, and other medicines used by us are found in the Chinese *Pharmacopœia*. There are many inert substances used. One author commends 132 substances from metals and stones, 99 from reptiles, shell-fish, and the like, and from parts of the human body and its exuviae a great number of things. The entire catalogue numbers 1012.

The land is overridden with quacks. The extravagant street-signs show it, on which the adventurer announces himself as a "physician and surgeon by descent for several generations." Necromancy and fortune-telling are combined with medicine. I have seen many of these impostors sitting out of doors at their divining tables with

their credulous dupes about them. It is also believed that the spirits sniff the refuse of the decoctions referred to, and so these are exposed in the streets. Good food and fruit are also spread on tables in-doors to appease the spirits, and mirrors to frighten them away. Burnt charms are taken in tea for cardiac disorders, and in pure water for ulcers and all fevers. Prayer-healing and casting lots in a bamboo tube with 100 sticks; rubbing a part of an idol, corresponding to the part of the body affected, and a multitude of other methods of treating disease cannot here be described.

At the hour of death, the Chinese, like the ancient Egyptians, believe that good and evil spirits seek the departing soul. I heard an attendant calling by the hour to a dying girl in a ward opposite my room in the hospital, a few weeks since, and was told that it was an appeal to the departing spirit to come back. The beating of gongs is common in Chinese homes in which death is near. So it is at fires. I have had evidence of this in two large conflagrations near us. The din was something dreadful.

Anybody can be a doctor here. If you read the books prescribed by the college at Peking and follow the pulse-points of the copper model, you are "a regular." If not, you are an irregular practitioner and may be convicted of homicide if your patient dies. If you prolong or aggravate the disease to increase your fee, the law says that the money is stolen, and if you lose your patient you must lose your head. I saw a pile of bloody heads on the execution grounds the other day, but did not identify any as belonging to doctors. Indeed, the law is dead, and thousands of mischievous heads remain on medical shoulders. Stranger still, the Chinese race increases, in spite of irrational medicine and the utter absence of those sanitary conditions on which we predicate health. The oldest nation on the earth shows no sign of physical decay.

As to surgery, there is none. Acupuncture may be an exception, and also the terrible emasculation practised at Peking, often with fatal results, in connection with the imperial harem, which is described in the papers of the North China Asiatic Society. Surgical interference is opposed by the superstitious notion that dismemberment or mutilation here will remain in the other life a permanent disfigurement. Furthermore, the rarity of drunkenness and the absence of railways and machinery diminish the number of cases requiring treatment by the surgeon. That there is no natural inability on the part of the Chinese to become first-class surgeons is a fact shown by notable examples. Dr. Wong, a classmate of mine, forty years ago, was the first Chinese on whom a foreign medical diploma had been con-

ferred. He was a graduate in medicine of the Edinburgh University, twenty years a successful practitioner, in charge of the Presbyterian Hospital, Canton, part of the time, and died in 1878. Dr. Ato, a colleague, was the first Chinese to acquire at home a knowledge of Western medicine. He performed, in 1847, at this hospital, the first operation with ether, and soon after, with wonderful dexterity and success, removed an enormous tumor, three feet in circumference, from the back, and another as large as the patient's head from the axilla. This latter operation involved careful dissection and the tying of three arteries. The whole was finished in four minutes. He was an ambidexter, excelled as an oculist, acquired a large fortune and was a man of commanding influence.

The changes wrought in the past half-century by Western medical and surgical science are marvellous, and constitute a powerful argument in behalf of medical missions. Dr. Peter Parker opened here in 1835 the first medical mission hospital in China. It has been remarked of him that "he opened the gates of China with a lancet when Western cannon could not heave a single bar!" Thousands of patients flocked to him from seventeen provinces, some consuming months in the journey, and going home with the voice of gratitude uttering his praise. His patients were found from the beggar in rags to the Emperor's household. The popularity of the Presbyterian Hospital was a guarantee of its safety in time of war, so that a British Consul said that he would regard himself securer in this house where I am now writing than in a gunboat on the river.

Dr. J. G. Kerr, now in charge of the Canton Hospital, has seen thirty-five years of toilsome service, and stands at the head of the profession in this country. He has had a medical class, male and female, who pay \$20 annually for tuition, and study three years. The instruction is wholly in Chinese. He has published many original works and translations of foreign authors. We are working together now for the establishment of an asylum for the insane, something unknown in China. Dr. Swan and Dr. Mary Niles are physicians here, the latter attending more than a thousand of her sex yearly. There is an unlimited field for women physicians, for Chinese females will endure prolonged suffering rather than be attended by men.

I have visited the medical school connected with the Alice Memorial Hospital at Hong Kong, and heard Dr. Thomson lecture in English. At Formosa there is another school where a knowledge of English is a condition of entrance. The course is four years. There has been a great deal of dispensary work ever since Drs. Robert Morrison and Livingstone opened a dispensary for the poor in Macao, seventy years ago. Drs. Colledge and Brad-

ford, of Philadelphia, should also be mentioned as pioneers, as well as Dr. Pearson, Surgeon of the East India Company, at Canton, in 1805, who introduced vaccination into the Empire—an unspeakable blessing in arresting what before had been an annual epidemic of a most loathsome and fatal character. Asiatic cholera has been another fearful scourge, more than 100 deaths a day occurring in a single town, Amoy, for nearly two months, in 1842. Thousands of lives have been saved by the missionaries.

The expressions of gratitude to Christian doctors by their heathen patients are novel and often pathetic. Gratitude is shown, not only by the *Kow-kow*—i. e., prostration and bumping the head on the earth—but by other acts, as at Foochow, where Dr. Kate Woodhull, a successful operator for cataract, some months ago received a handsome memorial tablet, which was hung up amid the explosion of firecrackers. The inscription read: "She has given her whole heart." One of Dr. Parker's patients requested leave to send a painter to make a portrait, that he might daily bow to it. Dr. Parker's pecuniary gifts were liberal, for he was an official secretary; and he composed an eloquent poem in praise of the medical missionary.

A sufferer from lupus at Kiang-Si, who had spent her all on native doctors and Buddhist priests, seeing the disease spreading over face and neck, went to the temple and told them that they and their gods were frauds. The priests were horror-stricken, and frightened her into the payment of \$7.50 in gold, to get which she sold a few remaining personal effects. The failure of their incantations exhausted the last ounce of patience she had. She and her husband returned to the temple, and cursed the gods and the Buddhists to their hearts' content. On their way home they fell in with a former patient of Dr. Douthwaite, whose body and soul had been saved by this kind physician. Three days by wheelbarrow brought them to Dr. Douthwaite, who not only prayed and read the gospel to them, but gave potassium iodide internally and iodine ointment externally. The disease was arrested, and in a month cured. They returned home, renounced idolatry, and led many of their neighbors to do the same. A Christian teacher was sent for; many more of the villagers threw away their idols; a church was organized where the true God was daily worshipped, and the members became missionaries, sending from their own number an evangelist to preach the gospel, which had done so much for their own village, to regions beyond their borders.

There are about sixty mission hospitals and eighty foreign physicians connected with them in this Empire, besides clergymen and assistants who have acquired a practical acquaintance with medicine

after years of service in isolated districts in the country.

In these far-away neighborhoods a knowledge of simple remedies in sickness and emergencies will save many lives, and invest a man with supernatural influence in the eyes of the priest-ridden and quack-denuded people. Shanghai, which I hope to visit shortly, and many other large cities and towns have hospitals, and natives are being taught Western science. Dr. Eldridge, who, under imperial patronage, has sent out more than thirty Japanese practitioners, said to me when in Yokohama, that in nothing had the recent intellectual advance been more satisfactory than in medical science in Japan. The more conservative Chinese are slower to welcome us with our Western ideas, but the heaven is surely working. Ever since Dr. Lockhart, who was a pioneer of 1843, went with Her Majesty's legation to Peking, at the close of the second war, princes of the palace and officers of highest rank have been applicants for relief at the hands of these "foreign devils," as we have hitherto been regarded.

A few weeks ago I was in an inland city, eighteen miles from Canton, where the chief manager of a native hospital came to the missionary physician, confessing the inutility of his own methods. He paid \$15 to be rid of hæmorrhoids, and went his way rejoicing. A pagan teacher, speaking of doctors, said recently, in substance, "When you find a thief on his way to your money-drawer do you pray with him? No, you call the police! So, if you are really ill, you want a foreign doctor." A few days ago a message came to the hospital here for help for a woman who was dying in labor. Dr. Kerr promptly responded, and saved both mother and child. (In an arm presentation the mother is left to die.) Again, yesterday, he had a similar call. The ignorant midwife was doing nothing, and held one dead child. Two more unborn, and the mother as well, would have died but for Dr. Kerr. A fortnight since, the naval admiral, General Fong, a high mandarin, came to us for relief for his aged mother, hundreds of miles away. One of our skilled woman physicians responded. A long journey and several weeks' absence are involved. It was a suggestive sight as I saw this stately officer and his attendants, in silken robes and gracious speech, soliciting the aid of foreign science, which their own wealth and boasted civilization failed to furnish. It was a type of Asia, herself, waking from the sleep of centuries to feel the flush and throb of a new life. When an elaborate manikin was shown, and certain medical and surgical methods explained, their wonder and admiration were something interesting to study.

But, I have not time or space to recite further incidents, or to record other data as to the introduction of Western science into this long-sealed, hermit-

like nation. My time is crowded, and postage is twenty cents an ounce! A long, *heavy* article is, therefore, out of the question. The Chinese Hippocrates of the second century, contemporary of Galen, gave medicine in doses of a pound, and the system which he founded was so popular that it continued one thousand years. I have ventured to give the reader an *ounce* dose, or less, promising more at another time, in reference to the special work in my hands, namely, the establishment, if possible, of an asylum for the insane. No such institution is to be found in the Empire. Such a humane and beneficent enterprise would fitly crown the history of Western medical science, which the last half-century has made so illustrious in this vast Empire of the oriental world.

PRESBYTERIAN HOSPITAL, CANTON.

### CROTON-CHLORAL IN NEURALGIA.<sup>1</sup>

By H. A. HARE, M.D.,

DEMONSTRATOR OF THERAPEUTICS AND CLINICAL PROFESSOR OF THE DISEASES OF CHILDREN IN THE UNIVERSITY OF PENNSYLVANIA.

THE use of butyl-chloral hydrate in the treatment of insomnia due to neuralgic pain is resorted to, in my belief, so rarely in this country that I have thought it worth while to call attention to its interesting action and relative value and safety.

Physiological experiment coupled with practical experience has convinced us all that chloral, while it is the best hypnotic for the majority of cases, is not one which will give sleep in painful affections or relieve neuralgias unless it is given in full doses, so full as to be dangerous. At the same time it is very desirable that we should have some preparation at hand which will both produce sleep and relieve pain. At present we use chloral and morphine together—the first for its somnifacient effects; the second to relieve the pain, and also to cause sleep. A very great advantage of butyl-chloral hydrate is its safety. The active dose for many cases of neuralgia is only 5 grains, given in pill-form, yet as much as 40 grains may be used without producing any more noteworthy effects than 20 grains of ordinary chloral so far as the heart and respiration are concerned.

The following case is of interest, as showing its advantages:

M. G., aged thirty-five years, has had, for over two years, a severe supra-orbital neuralgia, varying in intensity, and accompanied by roaring in the ears and loss of appetite and sleep. The cause of the neuralgia rests in the presence of middle-ear disease, with varying amounts of discharge. The Eustachian tubes are widely dilated and relaxed. The neuralgia is always worse when the discharge becomes in

<sup>1</sup> Read before the American Medical Association, Section of Practice of Medicine, Nashville, May, 1890.



any way suppressed, and the branches of the entire trifacial nerve become involved in the painful neuralgic shootings. At this time it is impossible for the patient to go to the front door, as the noise of the street hurts her head so much as to make the pain unbearable. The loss of strength and flesh was considerable, owing to the decrease in appetite and loss of sleep. Five grains of butyl-chloral hydrate were ordered every two hours in pill-form. Six pills were taken, with entire relief of all the symptoms and the attaining of good sleep and a better appetite. The effects of each dose lasted twenty-four hours, and then the pain required another six pills. She had no attacks for some weeks after this, although the ear was not discharging.

Functional insomnia resting upon no known cause also yields to this drug very well, but insomnia due to any advanced systemic lesion, as in phthisis, is not relieved in every instance under its use. The history of cases of phthisis who use the drug is that they sleep well the first night, and lie awake the second night to cough the lungs clear of mucus which has accumulated during sleep and while the nerves are obtunded by the drug. This second sleepless night can be quieted by a large dose, 20 grains, if desired, but I have never wished to run the risk of choking up the lung by preventing expectoration. In the neuralgia of phthisis and anæmia the drug is very serviceable.

Neuralgias of other nerves than the cranial are rarely benefited by butyl-chloral; but it is worthy of note that it may sometimes give relief in such cases by using with it 10 to 15 drops of the tincture of gelsemium.

In migraine, sick headache, and bilious headache, Ringer has recommended it, and in true migraine with hemianopsia it is certainly one of the most useful remedies along with antipyrine and caffeine, cannabis indica and gelsemium.

Curiously enough, while it cures the neuralgia due to a carious tooth, it does not cure toothache.

A great advantage possessed by croton-chloral is the applicability of moderate doses in cases of heart-disease.

#### A SUCCESSFUL VAGINAL HYSTERECTOMY.

BY J. T. BINKLEY, M.D.,

CONSULTING SURGEON TO THE FANNIE PADDOCK HOSPITAL; SURGEON TO THE HOSPITAL OF THE SISTERS OF CHARITY; ETC., TACOMA, WASHINGTON.

ABOUT the first of May I was called to see Mrs. E. S., aged forty-seven years, a hard-working, fleshy, but cachectic woman, weighing 175 pounds, the mother of four children, of whom the oldest was twenty, and youngest seven years of age.

She was suffering from constant pain, was confined to her room, and had a muco-sanguineous discharge from a cauliflower mass on the posterior lip of the cervix uteri. Her mother had a cancer of the breast removed at the age of forty-five years, and died of

recurrence three months later. Her sister, aged thirty-six, now has cancer of the breast. Two physicians had previously examined the case, and declined to treat it. I concluded that I had to deal with a recent cancer, and thought at once of operative measures. Before expressing my opinion, however, I decided to consult my partner, Dr. McKone, who was at the time out of the city. On his return, two weeks later, we examined the case, and he concurred in my opinion. We removed a fragment of the mass, had our diagnosis confirmed by microscopical examination, and decided to do a vaginal hysterectomy, as the uterus was freely movable, and the cervix so much involved that an amputation would not be radical. Her menstrual periods were occurring about once in twenty-three days. June 8th, about two weeks after the next period, was the date decided upon for operating.

The patient was taken to the Fannie Paddock Hospital, and put under preparatory treatment for a few days, Miss Gray, of the Philadelphia Hospital Training School, executing my orders.

We decided upon the method outlined by the late lamented Dr. Hunter in his excellent monograph, "The Technique of Vaginal Hysterectomy."

The excellent coöperation of the hospital officers, and the skill of the nurse made the most thorough antisepsis and asepsis possible. The pubes and vulva of the patient were carefully shaved and scrubbed. She was etherized, and placed in the lithotomy position by the hospital staff, at 10 A.M., June 8, 1890. The parts were again thoroughly washed with a 1-to-2000 bichloride solution; the instruments, previously boiled and immersed in carbolyzed solution, were conveniently placed, and presided over by Dr. J. J. McKone, and Dr. T. F. Smith, Surgeon of the Northern Pacific Railroad. Dr. Grant S. Hicks, Surgeon of the Marine Hospital, held the limbs and retractors. Dr. Myles gave the anæsthetics. Dr. E. G. Stratton, of Orting, and the nurses, attended to the sponges.

A broad Simon's blade in the vagina exposed the vault of the vagina, which I mopped out with strong carbolyzed solution, and then curetted the growth, and touched it with pure carbolic acid. After this I grasped the anterior lip of the cervix with vulsella forceps, drew it down firmly, passed a stout silk ligature high up, and made traction downward and backward, both with the forceps and ligature. A semi-circular incision was then made in the anterior vaginal vault, after which I carefully dissected with my finger through the cellular tissue between the bladder and wall of uterus, until the peritoneum was reached. An antiseptic plug of absorbent cotton was pushed into the cavity. The cervix was then drawn down and forward against the bladder, and a similar incision made in the posterior vault. The two incisions, however, did not meet, a small isthmus being left on either side of the neck. The posterior attachments were severed with the finger as before. An assistant then made forcible traction on the suture and forceps, while I applied a long-jawed Tait's hæmostatic forceps close to the cervix and body, avoiding the ureters, and severed the uterine arteries and tissues of the right side

nearly to the point of the forceps. A second pair of forceps were similarly applied, and the tissue severed on the opposite side. Two other pairs of forceps were applied higher up, between the first forceps and body of uterus, on either side, embracing all of the tissues up to the broad ligaments, which were then severed. Firm traction failing to bring down the uterus, I decided to retrovert it, which was accomplished by passing a curved, male, urethral sound into the cavity of the uterus, and rotating the point backward, bringing the fundus out through the posterior incision. This brought the upper borders of the broad ligaments within easy reach. I hooked them down with my finger, brought them within the jaws of the forceps, and severed the tissues on either side, making a clean cut up to the point of the second forceps, and entirely freeing the uterus, which was then easily delivered. But one bleeding point presented, and this was readily controlled by the seventh pair of forceps.

The cavity was then carefully sponged, the forceps were supported by iodoform gauze, lightly packed around them in the vagina, and by absorbent cotton about the handles externally. Each pair of forceps was firmly tied with silk to prevent slipping, and the patient was transferred to bed.

The time occupied by the operation, including anesthetization, was one hour and thirty-one minutes. The patient rallied well from the anæsthetic.

The following is a condensed daily report of the case:

*June 8.* Small portions of lime water and milk, and of water given. At 5 P. M. she had a little pain. Seven ounces of urine drawn, and a suppository of opium and belladonna inserted in rectum. Temperature  $98\frac{2}{3}^{\circ}$ , pulse 96. Has had several refreshing naps. 10 P. M., pulse 110, temperature  $98\frac{1}{2}^{\circ}$ .

*9th.* 4 A. M. Four ounces of urine drawn. Temperature  $98\frac{2}{3}^{\circ}$ , pulse 112. Restless. Was given a suppository. At 9 A. M. four ounces of urine drawn; face flushed; thirsty; "starts" in her sleep. At 4 P. M. five ounces of urine drawn. At 11 P. M. temperature  $101\frac{1}{3}^{\circ}$ , pulse 135. Pain in abdomen; tympany. Ordered one drachm of whiskey hourly. Rectal tube gave exit to considerable gas, followed by much relief. Cold to abdomen increases pain.

*10th.* Temperature  $99\frac{3}{8}^{\circ}$ , pulse 116. Gas escaping freely through rectal tube. A little nausea. Forceps removed at noon, forty-eight hours after the operation. The gauze came with them, and the vagina was repacked. Patient much relieved, but tympany persists. Passed twenty-three ounces of urine during the twenty-four hours. Turpentine stupes to abdomen.

*11th.* 1 A. M. Vomiting. Umbilicus protruding. Tympany enormous; much pain. Gave one-fourth grain doses of calomel every half-hour for four hours, followed by two-drachm doses of Epsom salts. Turpentine internally, glycerin suppository, and turpentine enema, all failed to produce a passage. Temperature and pulse remain the same. Urine a little increased in amount.

*12th.* Tympany and severe pain in abdomen. Feels as if bowels would move, but continued doses

of calomel and sulphate of magnesium fail to produce a passage. Gave a dish of corn-meal gruel and molasses, and in one hour the faradic current to the abdomen. A small, semi-liquid movement followed in about an hour, and two more free passages during the day. Temperature and pulse somewhat reduced.

*13th.* Tympany disappeared; patient much improved.

*14th.* Patient very comfortable. Quite natural passage from bowels. A slight burning sensation on urinating. Appetite good. Diet: Mush and milk, beef-tea, crackers, tea, and coffee. Slept well.

*15th.* Temperature  $99\frac{3}{8}^{\circ}$  to  $100\frac{1}{8}^{\circ}$ , pulse 91 to 100. More pain on urinating. Removed tampon, gave a douche, and repacked the vagina with iodoform-gauze. Eats and sleeps well.

*16th.* Appetite good, but cystitis increasing, and bowels loose. Rests fairly well. Temperature and pulse improved. Gave vaginal douche.

*17th.* A small bed sore appeared on left hip. Cystitis more severe. Bowels loose. Gave an alkaline diuretic.

*18th.* Eats and sleeps well. Cystitis and bed sore improved. Two grains of quinine every four or five hours. Temperature  $98\frac{2}{3}^{\circ}$  to  $99\frac{2}{3}^{\circ}$ , pulse 84. Sat up in bed.

*19th.* Much improved. Temperature and pulse nearly normal.

Gradually improved up to June 22d, when she sat up about four hours, in an invalid's chair.

On the 29th she was walking about the room, writing to friends, receiving visitors, etc.

She desired to go home, but we thought it wise to keep her in hospital another week. On July 3d, she had two hard chills (the second, I think, was increased by the nurse—a new one—who exposed the patient for her evening douche directly after the first chill) followed by a temperature of  $104\frac{2}{3}^{\circ}$ , entire loss of appetite, and one of the most violent cases of cystitis I ever saw. She begged to go home "to die." I had her removed, on a stretcher, on July 9th, to her home, where she rapidly improved under the usual treatment for cystitis until July 12th, when I discharged her.

She is now going about, free from pain, but has a slight serous discharge from the vagina. She eats and sleeps well.

#### FOUR CASES OF DISEASE OF THE MASTOID.<sup>1</sup>

BY ROBERT TILLEY, M.D.,  
OF CHICAGO.

BARKER, of London, in a study of abscesses of the brain, states that three-fourths of brain abscesses are in the temporo-sphenoidal lobes, and that nine-tenths of subdural abscesses are found in a circle one inch and a half in diameter, with its centre one inch and a quarter behind and one inch and a quarter above the centre of the bony auditory meatus. It might further be said that nearly all these abscesses originate from disturbances in some

<sup>1</sup> Read before the Illinois State Medical Society, May, 1890.

part of the external auditory apparatus. As long as facts substantiate this statement the study of mastoid affections will not cease to be interesting.

I desire to submit the following brief notes of four cases of mastoid affection which have recently come under my care:

CASE I.—Mr. J. M., thirty-eight years old, first seen, February 25, 1888. Recommended to my care by Dr. H. T. Byford. The patient had been suffering great pain on the right side of the head, and great sensitiveness, expressed by rigors, when the ear was touched. There was some discharge from the external meatus, and granulation-tissue extended from the meatus to the membrana tympani. The temperature varied from  $99^{\circ}$  to  $101^{\circ}$ , and the pulse from 100 to 120. There was not severe pain on pressure over the mastoid region, but a good deal of pain was complained of over the whole of the temporal bone, and extending to the right eye. The distress associated with the eye gave him great concern. No proof of hearing could be elicited on the right side. He was delirious at times, and talked of being poisoned by his family. Though advised to do so, he refused, for some time, to go to the Hospital. With the use of cathartics, and by attention to the external meatus, his condition was somewhat relieved.

On the 17th of March, the following month, he entered St. Luke's Hospital for operative measures. But I determined to wait a day or two, and give him the benefit of the advantages the Hospital possessed over his own home during the interval. I explored anew the external meatus, but found nothing promising there. I explored the nose more thoroughly than was possible in his home, and I was a little less sensitive to his expression of pain. I found the cartilaginous septum eroded on both sides, and in the posterior and upper part of the nose a vast quantity of muco-purulent material. I will add here that I could elicit no history of syphilis. It was denied, and he offered no objective indications of its previous existence. He had a large family, and his wife had had no miscarriages. There was a history of a blow on the head, which I could in no way connect with the existing affection. From the condition of the nose, however, I concluded that constitutional treatment would probably be advantageous. This treatment was begun at once, and his nose was washed out three times a day. Two days later, Monday, his condition was so much improved that the operation was no longer justifiable, and by the following Saturday, seven days from the time of the proposed operation, he was dismissed from the Hospital, and continued under treatment as an office patient. The pulse and temperature became normal. The pain in the eye and in the head over the region of the temporal bone, and the distressing dizziness, disappeared. Still later, the discharge from the middle ear ceased, and the hearing became practically normal. The ulcerated spots on the septum of the nose were healed. The process of cure extended over four months. He has had no return of the difficulty.

The interesting points in this case are the severe pain in the head, requiring confinement to bed for six weeks, the extreme sensitiveness of the ear, and the confusing dizziness, all of which yielded, without operative measures, to intra-nasal treatment, and to persistent constitutional measures, notwithstanding the impossibility of obtaining any specific history.

CASE II.—Mr. A. C., aged thirty-three years. Admitted to Hospital, February 10, 1890. About six weeks previously he lost the hearing in right ear; no pain. Two weeks later, ear began to discharge. During the last week pain had been very severe. No evidence of hearing on affected side, and the mastoid region was tender, red, and swollen; there was some discharge from the external meatus, and the membrane was perforated. There was no delirium. The throat gave evidence of previous cauterization, which the patient said was done with nitric acid in London. The pulse averaged 100, and the temperature varied from  $99^{\circ}$  to  $100^{\circ}$  F. Fomentations and palliative measures were used for three days without effect.

On February 13, 1890, the usual mastoid operation was performed. The external part of the bone was not rough, and no pus was encountered in reaching the bone. The only variation from the usual proceeding was in the instruments used for perforating the bone. I used for this purpose a modified farrier's knife. The chisel is, in my judgment, much better than the drill for perforating the outer tables of the mastoid. The cut is clean, and the operative field is open to view, which is not the case when we use the ordinary drill devised for that purpose. With the use of this knife, however, the advantage of the chisel is obtained without the sudden blow associated with the chisel, which should certainly be avoided. If the knife is held firmly, and the patient's head kept steady, and a good support be secured for the elbow, the outer plate is very readily perforated. In the present case the antrum of the mastoid was rapidly reached, pus appeared in the field of operation, and water passed in through the opening readily came through the external meatus.

The wound and external meatus were irrigated with 1-to-2000 bichloride solution, and dressed with iodoform-gauze. In the evening of the day of the operation the patient was reading the newspaper; the second day after the operation the temperature and pulse were normal, and discharge from the middle ear had ceased.

This was a typical case of simple abscess of the mastoid cells, uncomplicated by any marked necrosis; and one month from the time of his admission to the Hospital he was discharged, the wound completely healed and the hearing normal. The history is taken from the notes of Dr. J. E. Perekham, then interne in charge of the department at the Hospital. The reason of rapid recovery in this case was the absence of necrosed bone, the suppurative condi-



tion being confined to the soft tissues in the antrum mastoideum and the middle ear.

CASE III.—Mr. M. M., aged thirty-three years, bank clerk. Entered the Hospital, March 28, 1889. There was a history of protracted catarrhal affection of the nasal passages with impairment of hearing on each side, but worse on the left. Two weeks previously to his admission he complained of a "cold in the head." Severe pain, worse at night, was experienced in the right ear, and impairment of hearing was marked. There was some muco-purulent discharge from the right ear, and tenderness over the region of the mastoid, extending also in spots over the whole temporal bone. The swelling was insignificant; the pain was considerable, but there was no delirium. Temperature varied from 90° to 100° F., the pulse did not exceed 100.

During the interval between March 28th and April 14th, various emollient applications, constitutional treatment, and free paracentesis of the membrana tympani were tried without relief. The nose received attention, but beyond a puffiness of the inferior turbinated bones there was no disturbance in that region.

On April 14th, with the assistance of Dr. Robert Locke, interné in charge, from whose notes the case is reported, an incision was made in the usual position behind the ear. The bone was rough, and the periosteum was easily separated. The antrum was penetrated with the knife, previously described, making a gutter-like groove just on a level with and a little behind the external bony canal. The penetration of the cells gave exit to a small amount of muco-purulent discharge, and the solution used for the irrigation came from the external meatus. The wound was dressed with iodoform-gauze.

There was no marked relief from the pain over the temporal bone, nor was the temperature influenced. During the first few days after the operation, by closing the external auditory canal, the patient could force air through the opening in the mastoid. The same constitutional remedies were continued for about two weeks after the operation with no satisfactory result. There then appeared a swelling above and somewhat anterior to the ear; May 4th, about three weeks after the opening of the mastoid cells, the patient was again anesthetized, a deep incision, parallel to but about an inch and a quarter anterior to the primary incision, was made, and the bone was found rough. The lower part of this incision began at the juncture of the upper part of the auricle with the integument of the scalp, and extended upward about an inch. This incision was connected with the wound of the first operation beneath the periosteum, and a strip of gauze was placed under the periosteum to facilitate the passage of irrigating fluids over the rough bone. Both wounds were irrigated with a 3-per-cent. solution of hydrochloric acid. There was no pus found in the second operation, and a steady but somewhat slow improvement followed, discharge from the external meatus ceased, and hearing improved. The pain was less severe, and gradually subsided. The irrigation was continued twice a day, and both

wounds were kept open for three weeks. It was not, however, before June 3d—about a month after the second operation—that the temperature became normal, and even then slight elevations occurred regularly every evening till June 12th. June 15th, a little more than ten weeks after his admission to the Hospital, he was discharged. The wounds were completely healed. The perforation in the membrana tympani was healed, and the hearing was better than on the other side; not, however, so good as before the existence of the affection.

I am convinced that irrigation with hydrochloric acid solution rendered very good service here. In fact, I think it was the chief element in the cure. The swelling which appeared in front of the ear disappeared after its use, and no marked improvement was previously obtained. The use of hydrochloric acid solution for irrigation was, I think, first brought prominently before the profession by Dr. Edmund Andrews, of Chicago, in 1887.

CASE IV.—Mr. A. P., aged thirty-seven years. Saw the patient for the first time, March 22, 1890, when he was referred to me by Dr. D. T. Nelson. The left ear had been discharging for about two months. He had been in bed during that time, and was very weak. There was no cerebral disturbance. There were distinct redness, swelling, and tenderness over the left mastoid, extending in the direction of the sternocleido-mastoid; temperature ranged about 100° F. Examination of bony external meatus showed necrosed bone. He was recommended to the Hospital for operation, but he did not follow this advice until April 3d. At this time, when he entered the Hospital, the tissues extending downward from the level of the external meatus were greatly infiltrated, but gave no clear indication of the presence of pus. The breath was very offensive, and the tongue heavily coated.

On making the primary incision the bone was felt to be decidedly rough; the periosteum was easily separated, and exposure of the denuded bone showed rather a concave instead of a convex surface over the mastoid process, as though some operation had previously been performed there. On pulling the ear forward the sharp spoon slipped readily into the external canal, where the greater part of the diseased bone was located. It was not thought desirable, under these circumstances, to penetrate the cells, as the principal focus of necrosis was in the external meatus. The necrosed bone was thoroughly scraped with a sharp spoon, which was passed into the external meatus from the opening behind the ear. The infiltrated tissues in the neck were explored for pus, but none was found. The patient felt better, slept better, and ate better, after the operation, but it soon became manifest that some outlet would be necessary to relieve the inflamed tissues lower down. About ten days after the operation it was found necessary to make an incision in the tissues of the neck to give vent to a well-defined pocket of pus.

The original wound over the mastoid process and the necrosed tissue in the external meatus, as well

as the wound in the neck, were freely irrigated twice a day with 1-per-cent. hydrochloric acid solution. His mouth was cleaned several times daily with 2-per-cent. chlorate of potassium solution.

The patient rapidly, improved so that on the 27th of April he was discharged from the Hospital, to be treated as an out-patient. Apart from the scraping of the bone and the incision to relieve the infiltrated tissue, the irrigation with hydrochloric acid solution was the chief feature of the treatment in this case. I should add that some preparation of mercury was administered, but my conviction is that the benefit obtained was rather due to the hydrochloric acid solution. He is still under observation, but, apparently, no modification of the treatment will be needed beyond the application of a little burnt alum to any fungoid growths which may appear.

## MEDICAL PROGRESS.

**Cannabis Indica in Gastric Disorders.**—GERMAIN SÉE, in *La Médecine Moderne*, has published a long communication upon the action of cannabis indica in dyspepsia and gastric neuroses. His conclusions may be summed up briefly, as follows:

The drug, when employed in the form of the fresh extract, in doses of one grain divided into three equal parts for administration during the day, does not produce toxic symptoms, but is of value in the non-malignant forms of gastric trouble. These may be divided into two groups, namely, those in which there are alterations in the chemical character of the gastric juice, as, for example, hyper- or hypo-acidity; and those in which neuroses of the gastric or intestinal walls are present without modification of the gastric juice. In all these affections, whether dyspeptic or neurotic, we may find painful sensations, localized or radiating, spontaneous, or provoked by the contact of food. The troubles of movement are due to atony and dilatation, or the antiperistaltic state may be due to neurotic disorders. We may have, too, the formation of gases with eructations, and with vertigo, migraine, and similar affections. Under these circumstances Sée finds that cannabis indica does good with extraordinary constancy, diminishing the pain, reestablishing the appetite, and increasing digestion. Where there is hyper-acidity, Sée considers that the use of full doses of bicarbonate of sodium should be invariably administered in addition to the hemp, and that it should be taken after the ingestion of the meal.

Where atony is marked, cannabis indica does little good alone, but is useful if combined with lavage and hydrotherapy. Where spasmodic gastric movements occur, it is, however, very valuable by itself, and particularly so in the vomiting depending upon nervous disturbance. While it does not prevent the formation of gases in the stomach, nor stop eructations by any direct influence, cannabis indica prevents the uncomfortable distress accompanying this state, generally called pyrosis or "heartburn."

Sée asserts very strongly that gastric digestion is favored by the drug, and that it quiets hysteroid tendencies, as well as removes melancholia.

In many cases it is necessary to administer other remedies at the same time, such as alkalies in full dose; purgatives, if constipation be present; and, finally, antiseptics to the alimentary canal. Finally, Sée concludes that in this drug we have a veritable gastric sedative devoid of unpleasant narcotic effects.

**Treatment of Pulmonary Tuberculosis.**—The late DR. BREHMER, who treated cases of phthisis so successfully in his sanitarium at Goerbersdorf, was a strong advocate of the treatment of the disease in sanatoria. Such institutions, he believed, should be situated among the mountains, as the elevation increases the heart's action through diminished atmospheric pressure, and improves nutrition by stimulating the appetite. The locality should be immune from phthisis, and well sheltered from winds, which are especially injurious. Patients may be allowed considerable exercise in the open air, but upon the least fatigue rest is exceedingly important. Dr. Brehmer, believing nutrition to be of great importance, provided his patients with five meals daily, vegetables occupying a prominent place in the dietary. Every patient should also take three pints of milk daily, increasing to four pints if anorexia is pronounced. Wine is useful because it increases the power of the heart and economizes nutrition.

In the symptomatic treatment, dry, irritative cough should be controlled by "psychical influences," and by the drinking of cold water or of hot milk with seltzer. Morphine is indicated only when the cough is accompanied with expectoration and interferes with sleep. Moderate hæmoptysis is checked by the hypodermic injection of morphine, and an ice-bag to the cardiac region. Ergotin may be used if necessary. In profuse hæmoptysis violent coughing is often necessary to dislodge the clots, but if insufficient they may be removed by a finger introduced into the larynx. If there is much weakness and dyspnoea champagne is a useful stimulant. Fever may be reduced by cold to the præcordium, but if this is not effectual antipyrine or antifebrin may be employed. Night-sweats can often be prevented by the ingestion of a glass of milk containing one or two teaspoonfuls of cognac.—*Occidental Medical Times*, August, 1890.

**Sterilization of Catgut Ligatures.**—DR. GEORGE R. FOWLER (*Medical Record*, August 16, 1890) has had a series of experiments made to determine if boiling in alcohol will sterilize catgut. The results were positive, and, using them as a basis, Dr. Fowler recommends the following method of sterilization: The catgut is wound on ordinary wooden spools which have been boiled in soda solution. The spools are then placed in a fruit-jar, or in a bottle with a glass stopper, alcohol is poured in, and the stopper loosely inserted. The jar is then placed in a water-bath and boiled for an hour. As bacteria will not develop in strong alcohol, the catgut may be kept indefinitely in the fluid, which can be again boiled should there be a suspicion that the gut has become infected.

**The Spirometer in Diagnosis.**—M. JOAL, of Mont Dore, has made a number of observations in spirometry that lead him to the conclusion that many nasal and pharyn-

geal affections produce a distinct diminution in the capacity of the lungs. Thus, in cases where hypertrophic rhinitis, adenoid tumors of the naso-pharynx, chronic coryza, etc., have been cured, the capacity of the lungs, as measured by the spirometer, is frequently increased by one fourth, and occasionally even doubled. M. Joal has frequently found that public singers, when they complain of fatigue of the voice, or of diminution in its power or range, are suffering from some, perhaps quite unsuspected, disease in the nose or pharynx, and that if this is cured the normal condition of the voice is restored.

He suggests that professional singers should know their own respiratory capacity, and that this should be occasionally tested, so that any diminution may serve to give a warning of possible disease in the nose or pharynx, which may be the more easily cured because discovered early.—*Lancet*, August 9, 1890.

**The Treatment of Ruptured Uterus.**—In the treatment of ruptured uterus, DR. D. BERRY HART writes, that when the presenting part of the child is still in the genital tract, we must deliver in such a way as to avoid upward tension on the uterus, and, therefore, craniotomy or decapitation should be performed. If the rent is not extensive, he recommends either irrigation with weak sublimate solution, drainage, and abdominal pressure; or tamponade of the uterus, vagina, and rent with iodoform gauze, the edges of the rent being approximated by tenacula while the tampon is being applied. If the tear is extensive, and the fœtus or placenta has escaped into the peritoneal cavity, abdominal section is imperative. With regard to the treatment of the rent, suturing is condemned, as it is both tedious and ineffective. The choice is between Prevôt's operation and tamponing, both through the vagina and the peritoneum, with iodoform gauze. Dr. Hart is in favor of the former method, but mentions two cases in which the latter was successful. In conclusion, he expresses the opinion that even in apparently hopeless cases we should give the patient the chance that operative treatment offers.—*Medical Chronicle*, August, 1890.

**Errors in the Diagnosis of Specific Fevers.**—In a short paper based upon his report to the Glasgow Health Committee, DR. J. B. RUSSELL (*Glasgow Medical Journal*, July, 1890) calls attention, first, to the frequency with which an incorrect diagnosis is made in fever cases; and, secondly, to the cause of such errors, viz., the lack of proper training of medical students.

To show the frequency of mistakes in the diagnosis of infectious diseases, Dr. Russell has prepared a table of cases sent into the Belvidere Hospital during seven months of 1889. Of the 1499 cases admitted with the diagnosis of one of the various infectious diseases, in 114 the diagnosis was incorrect, and 85 were not suffering from any infectious disease whatever. The greatest number of errors occurred in the cases admitted as enteric and typhus fevers. Of the 42 cases sent in as enteric fever, 14 were cases of pneumonia, and 10 were absolutely non-febrile. Having pointed out the serious results of such mistakes in diagnosis, Dr. Russell shows how imperfect, in the majority of cases, is the student's training in the study of fevers [A fact no less true in this country than in Great Britain.—E.D.], and that many

students have never even seen the rashes and other signs and symptoms of specific fevers.—*Medical Chronicle*, August, 1890.

**Partial Removal of Diseased Ovaries.**—DR. MARTIN, of Berlin, only partially removes ovaries not entirely diseased. In some cases he has also resected part of the tube, and made, by suture of the mucosa to the serous coat, a new ostium. Dr. Martin, as the result of his experience, published in Volkmann's *Klinischer Vorträge*, came to the following conclusions: Patients recover perfectly after partial removal of ovaries for localized chronic inflammatory changes, hydrops folliculi, and oöphoritis. Recovery is also complete, in most cases, after the resection of obstructed and otherwise diseased tubes. The after-histories of seventeen patients operated upon by Dr. Martin prove that women with resected ovaries and tubes are not more exposed than other women to further disease of the parts left behind. Menstruation continued in all cases, and some patients conceived. Dr. Martin states that in 1864 Sir Spencer Wells emptied some dropsical follicles in one ovary of a young girl, having just removed its fellow. The girl afterward married and had children.—*British Medical Journal*, August 9, 1890.

#### Antiseptic Vaginal Injection.—

R.—Bichloride of mercury . . .	4 grains.
Sulphate of copper . . .	15 "
Chloride of sodium . . .	15 "
Tartaric acid . . .	8 "
Indigo . . .	a trace.
Distilled water . . .	2½ drachms.
Glycerin . . .	2½ " M.

This is to be added to one quart of water, and used after labor, if an injection is required.—*Gazette de Gynécologie*, August 1, 1890.

**Treatment of Puerperal Convulsions.**—In the treatment of puerperal convulsions, DR. R. T. TRIMBLE (*American Journal of Obstetrics*, August, 1890) advises the administration of veratrum viride, if the patient is plethoric, until its physiological effects are produced. This, if necessary, may be followed by morphine. If the patient is anæmic, it is better to commence with morphine. These remedies should be given hypodermically; the veratrum in doses of from 2 to 5 drops of the tincture, the morphine in doses of from ⅙ grain to ½ grain. If these drugs fail, give potassium bromide and chloral by the rectum in doses of from ½ to 1 drachm each. Chloroform is useful, and should be given during the convulsion to all cases. Delivery as early as the safety of the mother will permit should be the rule. Forceps-delivery is preferable, if it can be accomplished safely, but turning is better practice in some cases. Venesection is rarely required, as veratrum will accomplish all that can be expected from bloodletting, and more safely. One serious objection to bleeding is that we cannot know how much blood a woman in labor may lose from the uterus.

**Bi-hydrochlorate of Quinine for Hypodermic Use.**—In the *Bulletin Générale de Thérapeutique* of July 30, 1890,



BEURMANN and VILLEJEAN recommend the following preparation for the hypodermic use of quinine:

R.—Bi-hydrochlorate of quinine . . . 70 grains.  
Distilled water . . . . . 2 drachms.—M.

This solution holds 7 grains in each 10 drops, so that 20 drops, or an ordinary syringe-ful, would give a good dose of the drug.

As the bi-hydrochlorate of quinine is not generally to be had, it is to be made by taking ordinary chlorate of quinine, as it is found in commerce, and preparing the bichlorate in a few minutes by the following process: Add to distilled water enough hydrochloric acid to give it a specific gravity of 1.045 at 60° F. Then take 1 drachm of this acid solution and add to it 1 drachm of the chlorate of quinine. Finally, add to this enough distilled water to make 2 drachms, and filter. This solution is not caustic, since the acid is neutralized by the basic chlorate of quinine, so that the bi-hydrochlorate is not irritating.

**Mixture for Diarrhœa.**—The following formula is quoted by the *Canada Medical Record*:

R.—Wine of opium . . . . . 1 ounce.  
Tincture of valerian . . . . . 1½ ounces.  
Ether . . . . . ½ ounce.  
Oil of peppermint . . . . . 60 minims.  
Fluid extract of ipecacuanha . . . 15 "  
Alcohol, sufficient to make . . . 4 ounces—M.  
Dose, for an adult, 30 drops every three hours.

**Antipyrine in Cutaneous Affections.**—One of the symptoms which is most disagreeable in a large number of skin diseases, is the intense itching or soreness which causes scratching, with consequent injury to the parts involved. Many remedies are now added to the applications usually ordered to allay this troublesome state. Chief among these are carbolic acid, menthol, chloral hydrate, and cocaine, but even these often prove inefficient. According to BLASCHKO, of Berlin, antipyrine proves a most valuable remedy under such circumstances, and he recommends that for infants the following be given internally:

R.—Antipyrine . . . . . ½ drachm.  
Simple syrup . . . . . 1 ounce.—M.

Dose, half a teaspoonful at night before going to bed.

Sometimes larger doses are needed, but excellent results are to be obtained by this means in eczema, urticaria, strophulus, pemphigus, lichen ruber and planus. Not only does it prove palliative, but often curative, probably by preventing scratching. Antipyrine may also be used for hysterical pruritus with advantage, but in adults must be given in full doses and frequently.

**Prescription for Cardiac Dropsy.**—FÜRBRINGER uses the following in cases of dropsy from valvular insufficiency:

R.—Infusion of digitalis . . . . . 5 ounces.  
Citrate of caffeine . . . . . 30 grains.  
Tincture of strophanthus . . . . . 75 minims.  
Solution of potassium acetate . . . 15 drachms.  
Extract of glycyrrhiza . . . . . 75 grains.—M.

This amount is to be taken in two days.—*Medicinische-chirurgische Rundschau*, August, 1890.

**Treatment of Eczema in Children.**—According to the *Centralblatt f. d. gesammte Therapie*, DELAPERT uses the following in the eczema of children:

R.—Boric acid . . . . . 80 grains.  
Balsam of Peru . . . . . 8 "  
Vaseline . . . . . 1 ounce.—M.

**Atypical Whooping-cough.**—DR. EIGENBRODT, of Darmstadt (*Zeitschrift für klinische Medizin*, Bd. xvii. No. 6), believes, (1) that in addition to the typical form of whooping-cough there is an atypical or abortive form; (2) that the abortive form differs from the typical, only in the absence of the whoop during the paroxysms of coughing; (3) that abortive whooping-cough can be distinguished from bronchitis only by the fact of its contagiousness; (4) that the typical form of the disease may be contracted from the atypical, but, (5) that an attack of the latter does not confer immunity from the former. In support of these conclusions Dr. Eigenbrodt cites a number of cases in which attacks of true whooping-cough were clearly traceable to other cases of prolonged cough without the characteristic whoop.

**Saccharin Tooth-wash.**—The following prescription is quoted by the *Internationale klinische Rundschau*:

R.—Tincture of myrrh }  
" " benzoin } of each 13½ drachms.  
" " cinchona }  
Oil of cloves . . . . . 15 minims.  
Saccharin . . . . . ¾ grain.—M.

**The Acarus Folliculorum in the Eyelids.**—In the *Centralblatt für prakt. Augenheilkunde*, July, 1890, PROFESSOR STEIDA, of Königsberg, notes the occurrence of this parasite in the hair follicles of the human eyelids as a point of scientific interest, but of little probable importance. They have been found on almost all parts of the body, and seem to give rise to no pathological condition. In a postscript he questions the latter point, since in the lower animals a similar parasite does lead to follicular inflammation; and he cites a case where Burchardt found a living acarus in the contents of a Meibomian cyst, and a case of blepharitis in which Majocchi found a whitish secretion on the lid-margin, which contained numerous eggs and led to the discovery of numerous specimens of the acarus in the Meibomian glands. It is altogether probable, therefore, that they are by no means innocuous in the Meibomian and sebaceous glands, and that they may be found to be the cause of many of the obstinate and unexplained cases of inflammation of the lids. The subject seems well worth careful study.

**Butyl-chloral in Trigeminal Neuralgia.**—According to LIEBREICH, trigeminal neuralgia may be relieved by the internal administration of butyl-chloral (croton-chloral), which he prescribes in the following formula:

R.—Butyl-chloral . . . . . 40 to 75 grains.  
Alcohol . . . . . 2½ drachms.  
Glycerin . . . . . 5 "  
Distilled water { sufficient  
to make 4 ounces.—M.

The dose of this is from two to four teaspoonfuls.—*Therapeutic Gazette*, July, 1890.

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SATURDAY, AUGUST 30, 1890.

## THE PROPER PLACE FOR FOREIGN STUDY FOR AMERICAN MEDICAL MEN.

HUMAN beings are so much like sheep in their habit of following where their predecessors have led that it seems almost useless to attempt to divert their course from the clinics of Vienna or Berlin to those of London, Liverpool, or Edinburgh; yet anyone who has studied both on the continent of Europe and in England must have been impressed with a number of advantages possessed by English study over those offered in still more foreign lands. Very few medical men in this country recognize that the city of London, with its many millions of inhabitants, must possess a corresponding number of cases of disease and injury, and that the number of its hospitals, the thoroughness of its teachers, and the character of the people, all tend to aid in the pursuit of instruction in the cure of disease. There are other advantages, too, which are even more important. First and foremost is the fact that we all use the same language, and call things by the same names; second, the materia medica list is closely allied to our own, and the preparations are almost identical; third, the disease-processes seen in England resemble those seen in America more closely than do the diseases of other parts of Europe, and we can study morbid conditions in our own race instead of in races possessed of different

temperaments and habits, as well as food and drink.

The advantage of the mother-tongue is inestimable. Very few Americans who do not possess German blood know enough of the German language to understand the terms used by a rapid lecturer in the Fatherland, and, if they do not, they lose that which they chiefly desire, namely, the minute points of the subject before them. The average American going to one of the Continental clinics receives most of his instruction from docents, or other instructors of a comparatively low grade, simply because he is one of hundreds who throng, not only around the chief, but overflow to the subordinates; while in England, notably in London, the number of eminent men is so great, and the percentage of foreign students so small, that each and every one can sit at the feet of the teacher whose writings are known everywhere in the civilized world. While the student in Berlin or Vienna becomes imbued with the views of the single individual governing a given course, in London he may go from hospital to hospital and obtain different views, and in consequence become a man of broader ideas and greater resource. The fees at the various hospitals are no higher than in Germany, and the student has the privilege of being in the healthiest city in the world, and eating food resembling that which he receives at home, instead of placing himself in the notoriously bad surroundings of a Continental *pension-loge*, and living on food which only a Teuton can withstand.

So infinite are the advantages of London as a medical centre to Continental centres that it seems almost absurd to sing its praises, were it not that so many of our countrymen fail to go there, and the establishment of a post-graduate course, with Jonathan Hutchinson at its head, renders our lack of recognition of our own Fatherland the more culpable.

## THE RELATION OF FILTH TO TYPHOID FEVER.

ONE of the most interesting features connected with the development of what is known as the germ-theory of diseases is the ever-varying opinions expressed, by those best qualified to judge, of the relation of filth to the formation of a specific ailment. At one time, quite in the memory of comparatively recent graduates in medicine, it was taught that the presence of filth alone, without any specific virus, might provoke this disease. Thus, a

very eminent teacher would frequently detail an instance in which some miners who had been killed by an accident, were buried in a lot so situated that the water-supply of several houses became impure, and in these, in consequence, an epidemic of typhoid soon developed. Later than this we were taught that there was no typhoid fever without the presence of a typhoid-fever germ; and now we are informed by Dr. Vaughan, in his able and interesting article, published in the number of THE MEDICAL NEWS for August 16, 1890, that "wherever man pollutes the soil about him, the air that he breathes, and the water that he drinks, with his own secretions, there *enteric fever* will be found." Whether this conclusion is a correct one or not, only further study and wide experience can determine; and so many difficulties stand in the way of its proof that a distinct and positive result cannot be expected while our methods of experimentation are so crude. One of the chief difficulties connected with the study of the subject consists in the sterilization or preparation of the intestinal contents in such a manner as to prevent typhoid germs from growing, while others are allowed to thrive. This is necessary, since it is highly probable that these various germs may so alter the intestinal state that a few typhoid bacilli taken into the mouth in dust or water, and swallowed, may at once find a favorable place for growth. Doubt must always exist, in a case of typhoid fever where nothing but ordinary filth was ingested, as to whether that filth did not by means of the wind, or by other method of contamination, receive typhoid poisons. While it is true that ulcerations of the intestines, and fever, have been produced in man and animals, without the apparent presence of a typhoid bacillus as we know it, or are supposed to know it, we cannot help believing that the mere pollution of water or other ingesta with non-typhoidal filth will not produce this disease, and that the specific cause must be present. No better experiment to prove this can be cited than the epidemic of typhoid fever at Cumberland, Maryland, last winter and spring, which was especially reported to THE MEDICAL NEWS by a correspondent sent to the spot. As will be remembered by most of our readers, the entire drainage of the town was carried directly into the water-supply, and in consequence, for many months, dysentery and diarrhoea prevailed among the population who drank the water supplied by the city, but no typhoid

fever was present until an individual came to the town sick with this disease, when it speedily showed itself in an outbreak of a widespread character. The theory of the development of this disease must, therefore, be considered as represented in the following aphorism: No typhoid fever without infection from a previous case of typhoid fever. The ingestion of filth does not cause typhoid fever, but predisposes the patient to the disease by decreasing the vital resistance and affording a field for the growth of the peculiar germ.

## CORRESPONDENCE.

### TENTH INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE MEDICAL NEWS,

SIR: The fourth day of the International Medical Congress, Thursday, was devoted to the work of the different Sections. In that of Internal Medicine, diabetes was the main topic, and of course the question of diet was thoroughly discussed. Heart-disease and anæmia were also taken up, and the differential diagnosis between chlorosis, pernicious anæmia, and leukæmia were dwelt upon. In fact, diabetes, tuberculosis, nephritis, and empyema were the subjects to which this Section gave most of its attention.

On Friday morning, Dr. Senn, of Milwaukee, read his paper, "The Diagnosis and Operative Treatment of Bullet-wounds of the Stomach and Intestines." He illustrated it by three experiments on dogs. His claim, as many of your readers know, is that hydrogen gas should be used in all cases of gunshot-wounds of the abdomen to determine whether the gastro-intestinal canal is injured, and that unless it be injured, or unless collapse from bleeding is threatened, abdominal section should not be done. His first experiment proved that hydrogen can be forced from the rectum, through the ileo-cæcal valve, and small intestine, and can be ignited at the mouth. His second, that in case the intestine is wounded the gas will pass through the wound, and can be recognized by the tympany and by ignition at the orifice of the wound. In his third experiment, he shot a dog so as to make a number of intestinal wounds, and then by inflating through the rectum with hydrogen, he found each wound, no opening being overlooked. However, though he found the holes in the intestine, the dog died from hæmorrhage.

On Saturday morning the third and last general meeting was held. It was called to order by President Virchow, who read a telegram from Chicago, inviting the Congress to hold its next meeting at the time of the World's Fair in 1893. As Rome had already been decided on the thanks of the Congress were voted to the generous Americans for their kind invitation. Professor Wood, of Philadelphia, read the first paper, on "Anæsthesia," which was published in the THE MEDICAL NEWS August 9th. It was enthusiastically received and the thanks of the Congress were voted to the author. Professor Wood, as your readers know, comes to the conclusion that, in some cases, death from either ether or chloroform is due to heart-paralysis, in others to respi-



ratory paralysis, and that in still others death results from a combination of both.

Professor T. Lauder Brunton, in another paper read before the Congress, decided that in every case of chloroform narcosis resulting in death, respiratory paralysis was the cause, and that if the respiration be closely watched, and if at the first sign of failure artificial respiration be resorted to, no deaths would result. Thus both Professor Wood and Professor Brunton agree that artificial respiration is of the greatest importance as a remedy in collapse during anaesthesia.

Professor Cantani, of Italy, read a paper on "Antipyresis." He said that it has been positively shown that fever may be due to many different causes and is the general reaction of the system to some poisonous material, probably bacterial. In the different kinds of fever we must, of course, look for agents to destroy primarily the cause. In malaria we have such a remedy in quinine. In the cases where we cannot reach the cause we reduce temperature in one of two ways: 1, by abstracting heat, by cold baths, etc.; 2, by diminishing the production of heat by the antipyretic drugs. The object of the system in reacting by a high fever is threefold: 1. The high temperature actually destroys many of the pathogenic bacteria. 2. It increases the resistance of the tissues and the activity of the leucocytes in destroying bacteria. 3. It changes the tissues, making them an unsuitable soil for the growth of pathogenic organisms. If these conclusions are true, fever is a necessary reaction and must not be repressed, for it is better than artificial methods of killing the invading germs. The danger is not from the fever itself, save very rarely, and we should not give internal remedies which prevent the formation of heat. When, however, the temperature rises too high, the cold baths and sponging will greatly relieve the patient, while they will not check the reaction at all—in fact if anything will increase it; thus helping the system in its struggle against the enemy and aiding it in its own exertions. Cantani, therefore, believes that unless we can attack the germ which causes the fever, by an internal medicine, the best therapy is cold applications; and that all the antipyretics are dangerous, because they depress the already struggling system and stop the natural and best method of cure.

Professor Meynert, the famous neurologist of Vienna, read a very able paper on "The Synchronous Action of the Different Parts of the Brain," which, though valuable to the psychologist and specialist, is of little importance to the practising physician.

Professor Stokvis, of Amsterdam, followed with a paper on "Comparative Racial Pathology and the Capability of Resistance of the European in the Tropics." Long-extended study has convinced him that Europeans can be perfectly acclimatized to tropical climates, and that though the dangers to his life then are very great, he can, by close attention to hygiene, reduce the mortality there to the same percentage as at home. Professor Stokvis's studies have shown that the danger lies in the fact that Europeans do not always adjust their mode of living to the climate, but that when they do the results show that the European race is far more resistant to harmful climatic influences than even the natives. On these grounds he prophesies a complete control of all parts of the globe by the European.

Professor Virchow then made his closing address, in which he said that the world has never before seen such a medical meeting as this, in numbers or in the brilliancy of the members. He paid a glowing tribute to the visitors, and described the benefits of such international meetings. He closed with these words: "And now, my dear friends, let us part in the memory of eternal friendship; let us forget all personal feelings, and remember that this is a league of true workers in truth and peace. May we meet in the same spirit in the Eternal City of Rome in 1893."

In the absence of Dr. Guyon, Dr. Billings, of the U. S. Army, responded on behalf of the Americans. He expressed the high appreciation and the thanks of our country for the splendid reception.

The Congress having finished its work, the members are fast leaving the city. At present it is difficult to judge the value of the work of the Congress, and not until the proceedings have been carefully studied is a complete *résumé* possible. Nearly 800 papers were read; some were excellent, a few were poor, and many were mediocre.

Socially, the Congress was a grand success. The great reception in the Park on Monday, the reception by the city authorities in the Rathaus on Tuesday, were events never to be forgotten. The Section dinners, the balls, and the closing festivity on Saturday, all tended to make friends of strangers, and to impress the minds of the visitors with the beauty of German hospitality. The French were highly flattered when the sound of the Marseillaise rang through the halls of the Rathaus of Berlin; the Americans were electrified by Yankee Doodle in the same magnificent building, and good-fellowship abounded everywhere. Not an American found the slightest flaw in the social arrangements.

As far as arrangements are concerned, the Executive Committee may well be proud, for they received nothing but praise, and every wheel in the enormous machinery of the Congress worked smoothly. The Circus Renz was a fine place for the general meetings, and the numerous rooms of the Art Exposition furnished excellent quarters to the twenty-two Sections. The rooms were adorned with the finest productions of modern art. Every Section looked more like a palace than the hall of a scientific meeting.

In regard to the benefits to the profession, every member goes home more ambitious and energetic.

If Koch's work, of which he gave us merely a glimpse, stands the tests of further study, we may look for a revolution in the treatment of tuberculosis, and we must be prepared for new discoveries in the exanthemata. Lister indicated the course of surgery: that the utmost cleanliness is our motto, and that the less we interfere and irritate the better, that the air is not a dangerous septic element, and that drainage is only a substitute which we must try to dispense with.

BERLIN, August 10, 1890

#### THOMSEN'S DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of August 16th appears a paper by Dr. Harold U. Moyer, of Chicago, upon Thomsen's Disease, in which he takes exception to my views of

this malady, expressed in a paper published in 1886, in the *New York Medical Record*. The author gives, I think, a wrong impression of what I then said, for the existence of the affection, described by Erb, and one or two others, has never been disputed. I still adhere to my original idea, however, that Thomsen's disease, as an entity, is a rare malady, but that in many forms of coarse disease of the brain there are salient motor expressions which are not strictly "hysterical," but belong to what has been called the "Thomsen symptom-complex." In this conclusion I am supported by such observers as Buzzard, of London, C. L. Dana, of New York, and others. I may say, finally, that the interesting case presented by Dr. Moyer is an example of what I mean, and from the symptoms detailed I think it may as well be assumed to be one of those vague conditions of hyperkinesis as anything else. If in my original paper, or now, I have appeared to be conservative, or even hypercritical, it is because I was, and am, heartily opposed to the growing tendency to redundant and uncertain nomenclature, and to the use of meaningless proper names for the designation of varying and erratic groups of symptoms and uncertain pathological states.

ALLAN McLANE HAMILTON, M.D.

New York, August 19, 1890.

## NEWS ITEMS.

**Cholera Intelligence.**—According to the *Lancet*, the somewhat ominous silence in official quarters as to cholera in Spain has been broken by the announcement that the disease is still prevalent in Valencia, that it has undergone a recrudescence in that province, that there are also cases in the province of Alicante, and, lastly, that the disease has appeared in the province of Badajoz. Badajoz being one of the frontier provinces, the occurrence has led to great activity on the part of the Portuguese authorities, who have always put their main trust in quarantine restrictions, and who have already gone so far as to stop the entrance of Spanish trains into Portugal until the lazarettos and quarantine establishments are fully equipped. They have also stopped the mails, and letters from England intended to be shipped at Lisbon for the Cape have failed to reach that port. Between May 13th and August 2d, 1100 cases of cholera are stated to have occurred in Valencia and Alicante, 56 per cent. of the attacks having terminated fatally. France is still free from the disease, notwithstanding a recent assertion that a case had occurred in Paris. The attack in question was ultimately decided to be one of acute gastro-enteritis. The outbreak of cholera which has occurred in connection with the Mecca pilgrimage seems likely to be one of considerable importance. Stringent measures have been taken at the various ports and quarantine stations on the Arabian coast of the Red Sea to prevent the departure of the pilgrims except after they have undergone quarantine; but this part of the world is, above all others, the one where quarantine restrictions have exhibited their "leakiness"; and it has now been decided to employ a large number of troops to prevent exit from Arabia, and also entrance to Egypt, except by the recognized routes where lazarettos have been established. But the occurrence may come to have very serious significance for Europe,

for a number of Bosnian pilgrims will be returning to Austrian ports, and others will endeavor to reach Malta, and even get as far west as Marseilles. It is impossible to form any correct opinion as to the number of deaths which have as yet occurred. Whilst from one source of information it is stated that the largest daily mortality has reached 155, another source gives 500 as the diurnal number of victims.

**Legacy to the Medical College of Indiana.**—Dr. William Lomax, of Marion, Indiana, has given his estate, valued at \$100,000, to the Medical College of Indiana. The desire of the donor was to make the school a department of the Depauw University, at Greencastle, Ind. Failing in this, however, he determined to give the estate directly to the medical school.

**Obituary.**—Dr. J. Adams Allen, of Chicago, Ill., died August 15th, aged sixty-five years. For many years he held the chair of the practice of medicine and the presidency of Rush Medical College, having removed from Kalamazoo to Chicago, in 1859, in order to assume the former position. He edited the *Chicago Medical Journal*, in conjunction with Drs. Davis, Byford, and others, for ten or more years. He was surgeon-in-chief to the Chicago and Quincy Railroad. He published a work on medical examinations in life insurance that ran through several editions, and that was translated and published in Germany.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 19 TO AUGUST 26, 1890.

With the approval of the Acting Secretary of War, leave of absence for four months, to take effect about September 1, 1890, is granted WALTER REED, *Captain and Assistant Surgeon*.—Par. 17, S. O. 192, A. G. O., Washington, D. C., August 18, 1890.

By direction of the Acting Secretary of War, a Board of Medical Officers, to consist of: JOSEPH V. D. MIDDLETON, *Major and Surgeon*; CLARENCE EWEN, *Major and Surgeon*; and WILLIAM E. HOPKINS, *Captain and Assistant Surgeon*, will assemble at the U. S. Military Academy, West Point, New York, at 11 o'clock A.M., August 27, 1890, or as soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the Academy.—Par. 1, S. O. 192, A. G. O., Washington, D. C., August 18, 1890.

By direction of the Acting Secretary of War, CHARLES F. MASON, *First Lieutenant and Assistant Surgeon*, is relieved from further temporary duty at Fort Logan, Colorado, and will report for duty at his proper station (Fort Washakie, Wyoming).—Par. 3, S. O. 191, A. G. O., Washington, D. C., August 16, 1890.

By direction of the Acting Secretary of War, the retirement from active service, this date, by operation of law, of JOHN MOORE, *Brigadier-General and Surgeon-General*, under the provisions of the Act of Congress approved June 30, 1882, is announced. General Moore will repair to his home, Bloomington, Indiana.—Par. 2, S. O. 191, A. G. O., Washington, D. C., August 16, 1890.

## PROMOTION.

KENDALL, WILLIAM P., *First Lieutenant and Assistant Surgeon*.—To be Assistant Surgeon, with rank of Captain, after five years' service, from August 12, 1890.—*Headquarters of the Army*, A. G. O., Washington, August 18, 1890.

IVES, FRANCIS J., *Assistant Surgeon*.—To be Assistant Surgeon, with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1890.—*Headquarters of the Army*, A. G. O., Washington, August 11, 1890.

## RETIREMENT.

MOORE, JOHN, *Brigadier-General and Surgeon-General*.—August 16, 1890 (Act of June 30, 1890).—*Headquarters of the Army*, A. G. O., Washington, August 18, 1890.